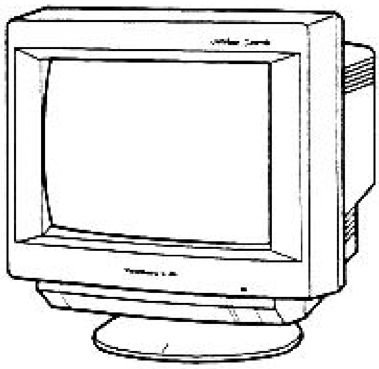
Service Manual

Multi-Scan Color CRT Display
MODEL NO. 2182PS

ViewSonic 21PS



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ViewSonic

SAFETY PRECAUTIONS

1 CAUTION:

No modification of any circuit should be attempted. Service work should only be performed after you are thoroughly familiar with all of the following safety checks and servicing guide lines.

2 SAFETY CHECK

Care should be taken while servicing this CRT display because of the high voltage used in the deflection circuits. These voltages are exposed in such areas as the associated flyback and yoke circuits.

3 FIRE & SHOCK HAZARD

3-1 Insert an isolation transformer between the CRT display and AC power line before servicing the chassis.

3-2 In servicing pay attention to original lead dress especially in the high voltage circuit. If a short circuit is found, replace all parts which have been overheated as a result of the short circuit.

3-3 All the protective devices must be reinstalled per original design.

3-4 Soldering must be inspected for possible cold solder joints, frayed leads, damaged insulation, solder splashes or sharp solder points. Be certain to remove all foreign material.

4 LEAKAGE CURRENT COLD CHECK

4-1 Unplug the AC cord and connect a jumper between the two prongs on the plug.

4-2 Turn the CRT display power switch "on"

4-3 Measure the resistance value with an ohmmeter between the jumpered AC plug and each exposed metallic part on the CRT display such as the metal frame, screwheads, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be 1.8 megohm minimum.

5 LEAKAGE CURRENT HOT CHECK

5-1 Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during this check.

5-2 Connect a 1500 ohm, 10 watt resistor, paralleled by a 0.15μF capacitor between each exposed metallic part and a good earth ground (as shown in Fig.1).

5-3 Use an AC voltmeter with 1000 ohm/volt or more sensitivity and measure the AC voltage across the combination 1500 ohm resistor and 0.15μF capacitor.

5-4 Move the resistor connection to each exposed metallic part and measure the voltage.

5-5 Reverse the polarity of the AC plug in the AC outlet and repeat the above measurement.

5-6 Voltage measured must not exceed 7.5 volt RMS from any exposed metallic part to ground A leakage current tester may be used in the above hot check, in which case any current measured must not exceed 5.0 milliamp. In the case of a measurement exceeding the 5.0 milliamp value, a rework is required to eliminate the chance of a shock hazard.

Note: High voltage is present when this CRT display is operating. Always discharge the anode of the picture tube to the display chassis to prevent shock hazard.

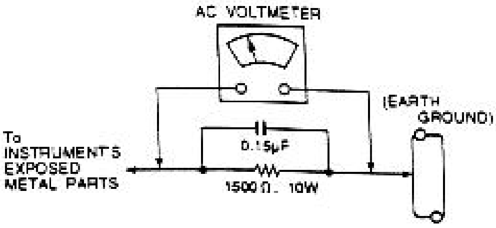


Fig.1

6 IMPLOSION PROTECTION

All **ViewSonic** picture tubes are equipped with an integral implosion protection system, but care should be taken to avoid damage and scratching during installation. Use only **ViewSonic** replacement picture tubes.

7 X-RADIATION

WARNING : The only potential source of X-Radiation is the picture tube. However when the high voltage circuitry is operating properly there is no possibility of X-Radiation problem. The basic precaution which must be exercised is to keep the high voltage at the following factory-recommended level.

Note: It is important to use an accurate periodically calibrated high voltage meter.

IMPORTANT SAFETY NOTICE

There are special components used in this CRT displays which are important for safety. These parts are identified by the international symbol ⚠ on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with manufacture's specified parts to prevent X-RADIATION, shock, fire or other hazards. Do not modify the original design without written permission of the **ViewSonic Corp** . Company or this will void the original parts and labor guarantee.

SERVICE WARNING

TO PREVENT RISK OF ELECTRIC HAZARD, TEST BEFORE TOUCHING. Where, after operation of the fuse in the live side of the mains supply, some components of the equipment that remain under voltage might represent a hazard during servicing.

GENERAL INFORMATION

1. OUTLINE

2182PS is 21 inch (20"V) multi-scan color CRT display with the following nice features.

OSD (on screen display) Control is newly introduced, which allows easy user adjustment.

Power saving function, which helps saving energy, is also one of the highlights of this model.

2. FEATURES

2-1 Power Saving
- Built in Power Saving function based on VESA-DPMS standard.
- Power energy shall be saved by controlling the circuit in accordance with power save signal from computer.

2-2 OSD function
- OSD (on screen display)function is new and excellent man-machine interface.
  Any one is able to set up the picture as he like through OSD menu.

2-3 Self Test function
- Self Testing picture comes out by pushing $\boxed{1}$ -key in the case of no-connection with computer or power saving operation.
  This function shows if monitor is alive or not and can be used for self aging test.

2-4 Power Supply with high power factor
- Power Supply with high power factor enables to utilize AC power efficiently and it will meet IEC555-2.

2-5 Ergonomic design
- Low emission design to meet MPR Ⅱ
- ESF (Electro static field) free coating on CRT

2-6 Multi scan with digital technology
- 8 bit micro computer controls the circuit operation to meet with wide range signal of f_H=30~82kHz and f_V=50~160Hz. So VGA640x350, VGA640x400, VGA640x480, SVGA800x600, 1024x768, 1152x900, 1280x1024 and 1600x1280 mode are applicable

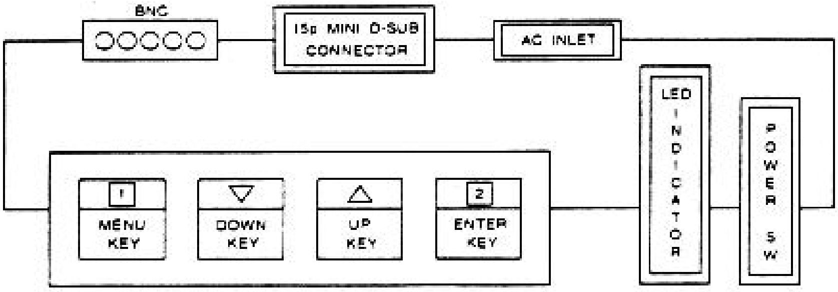
2-7 8 Factory presets (3 preset + 5 reservation), 13 user memories
- 8 standard modes are preset at the factory (3 preset + 5 reservation mode)
- 13 user memories are available to set the users own timing and display information

2-8 Flat Face and fine dot pitch
- Flat face CRT with fine dot pitch 0.25mm gives a comfortable sight of the screen.

2-9 Superior display performance
- Good focus by sophisticated gun and dynamic focus circuit
- High brightness
- Minimized distortion by correction circuit
- Good convergence
- Users enjoy full scan image for graphics

SPECIFICATION

1. DIAGRAM



3.1 POWER SW, LED, $\boxed{1}$-key (MENU), ▽-key (DOWN), △-key (UP), and $\boxed{2}$-key (ENTER) are located on the front panel.

3.2 Signal connectors and AC inlet are located on the back side of the cabinet.

3.3 OSD menu includes the following function CONTRAST, BRIGHTNESS, H/V SIZE, H/V POSITION, V PIN-CUSHION, TRAPEZOID, DEGAUSS, PARALLELOGRAM, COLOR SELECT, USER COLOR, VIDEO INPUT LEVEL, VIDEO INPUT SELECT, H/V, MOIRE REDUCTION, ROTATION, DISPLAY FREQUENCY, RECALL
- CONTRAST can be directly controlled with ▽/△-key
- VIDEO INPUT SELECT can be directly controlled by pushing $\boxed{2}$-key.
- With sync signal, OSD menu appears by pushing $\boxed{1}$-key
  With sync signal, self test menu appears by pushing $\boxed{1}$-key.

2. MECHANICAL SPECIFICATIONS

..... refer to the attached drawing

2.1 Dimension Height : 478 mm (18.8") typ.
Width : 505 mm (19.9") typ.
Depth : 510 mm (20.1") typ.

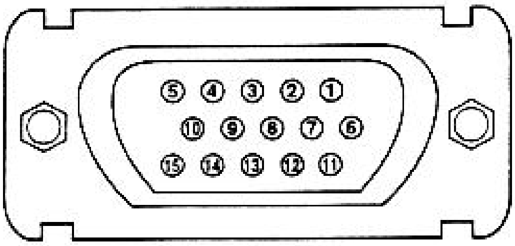
2.2 Net Weight : 28.0kg (58.5 lbs) typ.

3. CONNECTORS

3.1 Signal connector: 15P Mini D-Sub X 1
BNC connector X15

3.2 AC inlet: CEE 22 typed connector

15P Mini D-Sub Pin assignment



1 ... RED
2 ... GREEN
3 ... BLUE
4 ... GROUND
5 ... – (OPEN)
6 ... GROUND
7 ... GROUND
8 ... GROUND
9 ... – (OPEN)
10 ... GROUND
11 ... GROUND
12 ... – (OPEN)
13 ... H.SYNC
14 ... V.SYNC.
15 ... – (OPEN)

4. CRT SPECIFICATIONS

Part No.	M51KYY140X
Type	21" (19.67" viewable) diagonal
Dot Pitch	0.25 mm
Phosphor	R, G, B Short Persistence
Bulb	DARK TINT
Face	AGRAS COAT
Total Transmission	39.5%

5. ELECTRICAL SPECIFICATIONS

5.1 Standard conditions ... Except special items

Display image	Green, full "H" characters with a border l x ine. (7 x 9 dots) Video siganl : 100% duty display area : 380mm x 285mm
Video signal level	0.7Vpp
Contrast, Brightness	Contrast : Max., Brightness : center point
Ambient Temperature	20 ± 5°C (68 ± 9°F)
Input Voltage	AC 120V, 60Hz
Terrestrial magnetism	Vertical field : northern hemisphere field (40μT) Horizontal field : no field
Viewing direction	Parallel to the CRT axis
Measurements	After an initial warming up time of more than 30 minutes.
Ambient light	200 ± 50 lX
Display mode	MODE2 1024 x 768 (60.0kHz, 75Hz)

5.2.1 Power supply ... Commercial power source

Input voltage	AC90 - 264V
Power frequency	50/60 Hz
Input current	1.7A Max. (100V) (*1)
Inrush current (at 20°C)	40 Aop
Power consumption	150W (Typ)

(*1) Input current is reduced to about 60% of our current products by "High Power Factor" technology.

5.2.2 Power Management for Power Saving ...

Power saving system is designed based upon VESA DPMS Standard (Version : 1.0)

1) Power consumption and recovery time.

*1 APM State	SIGNALS			MONITOR POWER CONSUMPTION	RECOVERY TIME TO ON STATE	INDICATOR
	H. Sync	V. Sync	VIDEO			
ON	*3 NORMAL	*3 NORMAL	*2 ACTIVE	*4 100%	——	Green
STAND-BY	No Sync or *5 < 6Hz	> 40Hz	BLANK	< 30W	< 4s	Yellow
SUS-PEND	> 10kHz	No Sync or *5 < 20Hz	BLANK	< 30W	< 4s	Yellow
OFF	No Sync or *5 < 6Hz	No Sync or *5 < 20Hz	BLANK	< 8W	< 20s	Yellow

** The transition time from ON state to each APM states is 5 seconds minimum.

*1 : APM : Advanced Power Management.

*2 : Meas. Condition of power consumption for ON state.
DISPLAY IMAGE : WHITE full "H" characters with a border line (7 × 9 dots).

*3 : NORMAL : see "5.4 ACCEPTABLE TIMING".

*4 : Power Consumption is measured at AC 100-240V.

*5 : Power saving operation is done at least less than specified value in the list.

5.3 Standard timing

- Following total 8 modes are preset in the memory as standard timing at the factory.
- Refer to Fig. 2 as a definition of timing and signal level.
- This SPECIFICATION is specified at STD (1024 x 768) mode unless otherwise mentioned.

TIMING CHART

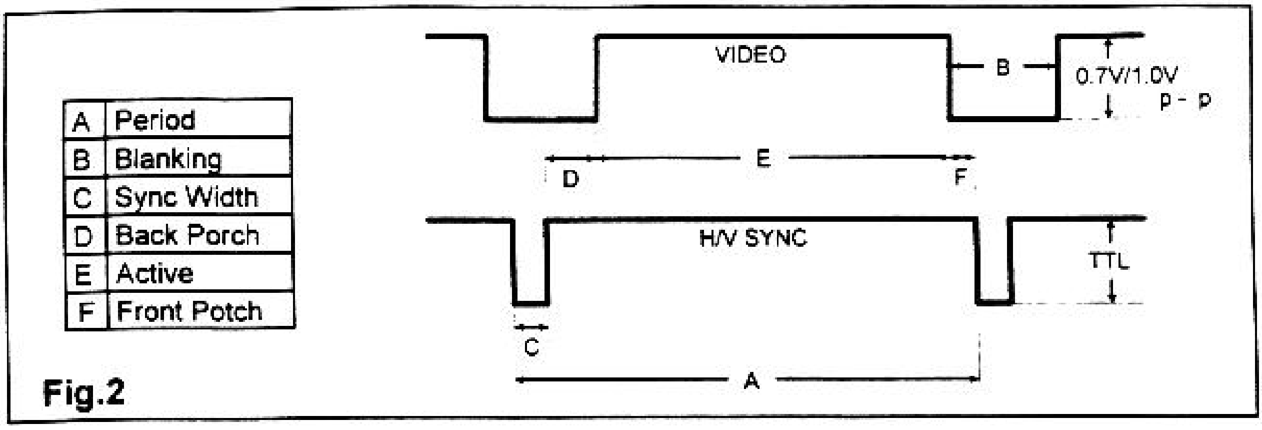


Fig.2

FOR PRESET

		MODE - 1	MODE - 2	MODE - 3
		640 X 480 (60)	1024 X 768 (75)	1280 X 1024 (75)
DOT CLOCK		25.1745 MHz	78.7500 MHz	135.0000 MHz
H	f H	31.4681 KHz	60.0229 KHz	79.9763 KHz
	A - PERIOD	31.778 µs (800 dots)	16.660 µs (1,312 dots)	12.504 µs (1,688 dots)
	B - BLANKING TIME	6.356 µs (160 dots)	3.657 µs (288 dots)	3.022 µs (408 dots)
	C - SYNC WIDTH	3.813 µs (96 dots)	1.219 µs (96 dots)	1.067 µs (144 dots)
	D - BACK PORCH	1.907 µs (48 dots)	2.235 µs (176 dots)	1.837 µs (248 dots)
	E - ACTIVE TIME	25.423 µs (640 dots)	13.003 µs (1,024 dots)	9.481 µs (1,280 dots)
	F - FRONT PORCH	0.636 µs (16 dots)	0.203 µs (16 dots)	0.119 µs (16 dots)
V	f V	59.9393 Hz	75.0286 Hz	75.0247 Hz
	A - PERIOD	16.684 ms (525 lines)	13.328 ms (800 lines)	13.329 ms (1,066 lines)
	B - BLANKING TIME	1.430 ms (45 lines)	0.533 ms (32 lines)	0.525 ms (42 lines)
	C - SYNC WIDTH	0.064 ms (2 lines)	0.050 ms (3 lines)	0.038 ms (3 lines)
	D - BACK PORCH	1.049 ms (33 lines)	0.466 ms (28 lines)	0.475 ms (38 lines)
	E - ACTIVE TIME	15.254 ms (480 lines)	12.795 ms (768 lines)	12.804 ms (1,024 lines)
	F - FRONT PORCH	0.318 ms (10 lines)	0.017 ms (1 lines)	0.013 ms (1 lines)
SYNC POLARITY(H/V)		Negative / Negative	Positive / Positive	Positive / Positive

FOR RESERVATION

		MODE - 4	MODE - 5	MODE - 6
		640 X 480 (75)	800 X 600 (75)	1024 X 768 (70)
DOT CLOCK		31.5000 MHz	49.5000 MHz	75.0000 MHz
H	f H	37.5000 KHz	46.8750 KHz	56.4759 KHz
	A - PERIOD	26.667 µs (840 dots)	21.333 µs (1,056 dots)	17.707 µs (1,328 dots)
	B - BLANKING TIME	6.349 µs (200 dots)	5.172 µs (256 dots)	4.053 µs (304 dots)
	C - SYNC WIDTH	2.032 µs (64 dots)	1.616 µs (80 dots)	1.813 µs (136 dots)
	D - BACK PORCH	3.810 µs (120 dots)	3.232 µs (160 dots)	1.920 µs (144 dots)
	E - ACTIVE TIME	20.317 µs (640 dots)	16.162 µs (800 dots)	13.653 µs (1,024 dots)
	F - FRONT PORCH	0.508 µs (16 dots)	0.323 µs (16 dots)	0.320 µs (24 dots)
V	f V	75.0000 Hz	75.0000 Hz	70.0694 Hz
	A - PERIOD	13.333 ms (500 lines)	13.333 ms (625 lines)	14.272 ms (806 lines)
	B - BLANKING TIME	0.533 ms (20 lines)	0.533 ms (25 lines)	0.673 ms (38 lines)
	C - SYNC WIDTH	0.080 ms (3 lines)	0.064 ms (3 lines)	0.106 ms (6 lines)
	D - BACK PORCH	0.427 ms (16 lines)	0.448 ms (21 lines)	0.513 ms (29 lines)
	E - ACTIVE TIME	12.800 ms (480 lines)	12.800 ms (600 lines)	13.599 ms (768 lines)
	F - FRONT PORCH	0.027 ms (1 lines)	0.021 ms (1 lines)	0.053 ms (3 lines)
SYNC POLARITY(H/V)		Negative / Negative	Positive / Positive	Negative / Negative

FOR RESERVATION

		MODE - 7	MODE - 8
		1152 X 870 (75)	1280 X 1024 (60)
DOT CLOCK		100.0000 MHz	109.4695 MHz
H	f H	68.6813 KHz	63.7192 KHz
	A - PERIOD	14.560 µs (1,456 dots)	15.694 µs (1,718 dots)
	B - BLANKING TIME	3.040 µs (304 dots)	4.001 µs (438 dots)
	C - SYNC WIDTH	1.280 µs (128 dots)	1.425 µs (156 dots)
	D - BACK PORCH	1.200 µs (120 dots)	2.174 µs (238 dots)
	E - ACTIVE TIME	11.520 µs (1,152 dots)	11.693 µs (1,280 dots)
	F - FRONT PORCH	0.560 µs (56 dots)	0.402 µs (44 dots)
V	f V	75.0616 Hz	59.9992 Hz
	A - PERIOD	13.322 ms (915 lines)	16.667 ms (1,062 lines)
	B - BLANKING TIME	0.655 ms (45 lines)	0.596 ms (38 lines)
	C - SYNC WIDTH	0.044 ms (3 lines)	0.047 ms (3 lines)
	D - BACK PORCH	0.568 ms (39 lines)	0.502 ms (32 lines)
	E - ACTIVE TIME	12.667 ms (870 lines)	16.071 ms (1,024 lines)
	F - FRONT PORCH	0.044 ms (3 lines)	0.047 ms (3 lines)
SYNC POLARITY(H/V)		Negative / Negative	Sync on Green

FOR ADJUSTMENT

		1	2	4
DOT CLOCK		22.6000 MHz	40.2480 MHz	86.0645 MHz
H	f H	29.5039 KHz	39.0000 KHz	64.5200 KHz
	A - PERIOD	33.894 µs (766 dots)	25.641 µs (1,032 dots)	15.500 µs (1,334 dots)
	B - BLANKING TIME	6.018 µs (136 dots)	5.988 µs (241 dots)	3.602 µs (310 dots)
	C - SYNC WIDTH	4.115 µs (93 dots)	2.832 µs (114 dots)	1.185 µs (102 dots)
	D - BACK PORCH	1.283 µs (29 dots)	2.435 µs (98 dots)	1.975 µs (170 dots)
	E - ACTIVE TIME	27.876 µs (630 dots)	19.653 µs (791 dots)	11.898 µs (1,024 dots)
	F - FRONT PORCH	0.619 µs (14 dots)	0.721 µs (29 dots)	0.442 µs (38 dots)
V	f V	48.0520 Hz	77.0751 Hz	105.0814 Hz
	A - PERIOD	20.811 ms (614 lines)	12.974 ms (506 lines)	9.516 ms (614 lines)
	B - BLANKING TIME	0.915 ms (27 lines)	0.744 ms (29 lines)	0.480 ms (31 lines)
	C - SYNC WIDTH	0.102 ms (3 lines)	0.103 ms (4 lines)	0.046 ms (3 lines)
	D - BACK PORCH	0.712 ms (21 lines)	0.513 ms (20 lines)	0.356 ms (23 lines)
	E - ACTIVE TIME	19.896 ms (587 lines)	12.231 ms (477 lines)	9.036 ms (583 lines)
	F - FRONT PORCH	0.102 ms (3 lines)	0.128 ms (5 lines)	0.077 ms (5 lines)
SYNC POLARITY(H/V)		Negative / Negative	Negative / Negative	Negative / Negative

FOR ADJUSTMENT

		5
DOT CLOCK		134.9800 MHz
H	f H	82.5061 KHz
	A - PERIOD	12.120 µs (1,636 dots)
	B - BLANKING TIME	2.904 µs (392 dots)
	C - SYNC WIDTH	1.096 µs (148 dots)
	D - BACK PORCH	1.526 µs (206 dots)
	E - ACTIVE TIME	9.216 µs (1,244 dots)
	F - FRONT PORCH	0.282 µs (38 dots)
V	f V	165.0122 Hz
	A - PERIOD	6.060 ms (500 lines)
	B - BLANKING TIME	0.497 ms (41 lines)
	C - SYNC WIDTH	0.036 ms (3 lines)
	D - BACK PORCH	0.376 ms (31 lines)
	E - ACTIVE TIME	5.563 ms (459 lines)
	F - FRONT PORCH	0.085 ms (7 lines)
SYNC POLARITY(H/V)		Negative / Negative

5.4 Acceptable timing

5.4.1 If your timing is within following specification, this CRT display can automatically function with a certain size and position.

Horizontal: Sync frequency: 30.0 – 82.0 kHz
Blanking Time: ≥ 3.0 μS
Back Porch: ≥ 1.25 μS
Front Porch: ≤ Back Porch
Sync Width: ≥ 1.2 μS
Vertical: Sync frequency: 50.0 – 160.0 Hz
Blanking Time: ≥ 0.5 mS
Back Porch: ≥ 0.5 mS
Sync Width: ≥ 0.045 mS

5.4.2 • Several items like size, position and distortion can be adjusted through OSD menu, and if you want to keep it, please push the key $\boxed{1}$ for memory or keep the key untouched for about 20 seconds, it is automatically memorized.

NOTE : In case of RECALL, the keys is untouched for about 30 seconds, RECALL function will be cancelled.

Please notice, however, that there is the case you can not get the size and/or position you want. (for example Display Time is too short, then you can't get bigger size of the image.)

5.4.3 The CRT adopted in this CRT display is designed to minimize the moire phenomenon at suitable size for typical display modes. However, there might be a display format among many formats, in which the moire phenomenon appears on this display.

5.5 Signal level and input impedance

5.5.1 Video signal level

- This CRT display is adjusted at the factory using 0.7Vp-p video signal. Black level is 0V.
- This CRT display is compatible with 1.0Vp-p video signal by using video input level section in OSD function.

5.5.2 Sync signal level

- H/V Separate, H/V Mixed : TTL level
- Sync on Green : 0.286 Vpp

5.5.3 Input impedance
Video input: 75Ω
Sync input: ≥ 1 kΩ

5.6 Display performance

5.6.1 Display area

1) PRESET TIMING
MODE1, 2
WIDTH : 380mm ± 5mm
HEIGHT : 285mm ± 5mm
MODE3
WIDTH : 355mm ± 5mm
HEIGHT : 284mm ± 5mm

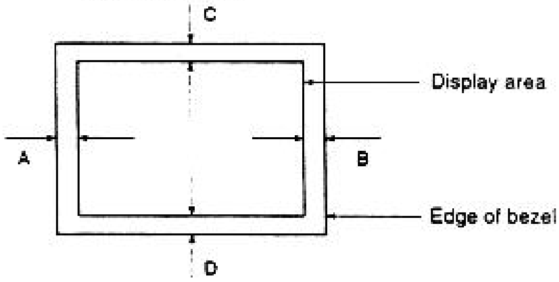
2) RESERVATION TIMING
MODE4~7
WIDTH : 380mm ± 7mm
HEIGHT : 285mm ± 7mm
MODE8
WIDTH : 355mm ± 7mm
HEIGHT : 284mm ± 7mm

3) DISPLAY AREA (Full scan)
WIDTH : 402mm
HEIGHT : 301mm

5.6.2 Centering

1) PRESET TIMING (MODE1~3)
|A – B| ≤ 4 mm
|C – D| ≤ 4 mm

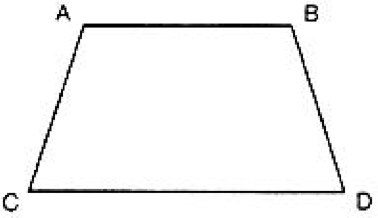
2) RESERVATION TIMING (MODE 4~8)
|A – B| ≤ 7 mm
|C – D| ≤ 7 mm



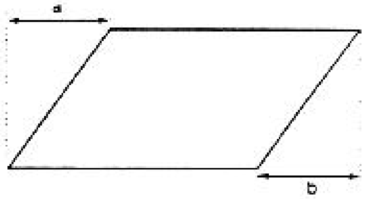
5.6.3 Distortion

5.6.3. a) Trapezoid

|AC – BD| ≤ 2.5mm
|AB – CD| ≤ 2.5mm



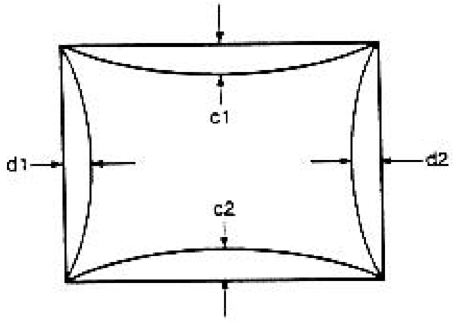
b) Parallelogram
a, b ≤ 2mm



5.6.3 c Pincushion and barrel

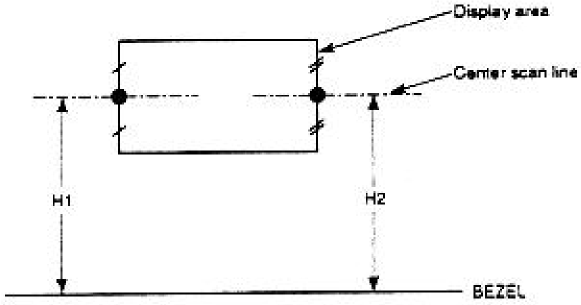
$|C1|, |C2| \leq 2.5$ mm

$|d1|, |d2| \leq 2.0$ mm



5.6.4 Rotation

$|H1 - H2| \leq 2.5$ mm



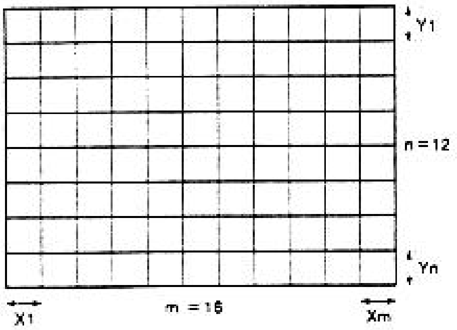
5.6.5 Linearity

Horizontal linearity

$$= \frac{X\,max. - X\,min.}{X\,max. + X\,min.} \times 100\% \leq 6\%$$

Vertical linearity

$$= \frac{Y\,max. - Y\,min.}{Y\,max. + Y\,min.} \times 100\% \leq 6\%$$



Conditions

Display image - crosshatch pattern

Maximum and minimum values should not be adjacent to each other.

X max. is maximum value among X1~Xm

X min. is minimum value among X1~Xm

Y max. is maximum value among Y1~Yn

Y min. is minimum value among Y1~Yn

5.7 General performance

5.7.1 Video output

Bandwidth	135MHz (Typ)

5.7.2 Maximum luminance

Value	120 cd/m² (min.)for 5% white field at the center of the display area. 100cd/m² (min.) for 100% white field at the center of the display area. Specified by 9300K + 27MPCD
Conditions	Luminance : Max. (Contrast : Max.) (Brightness : Center)

5.7.3 Minimum luminance

Value	≤ 17 cd/m² at the center of the display area. Specified by 9300K + 27MPCD
Conditions	Display image : White full flat field Luminance : Min. (Contrast : Min.) (Brightness : Center)

5.7.4 Brightness variation

Value	70% (Min.) Variation = C/A X 100
Conditions	Display image : White full flat field Luminance : MAX (Contrast : MAX) (Brightness : Center) A : Luminance at center position C : Luminance at center position of lowest brightness

5.7.5 Display area regulation

	Display area variation	Range of variation
Due to Luminance	within 1.0% of display area (white flat field)	17~100 cd/m²
Due to Power Supply	within 1.0% of display area	AC : 90 - 132V or 180 - 264V
Due to Temperature	within 1.5% of display area	0 - 40°C

5.7.6 Color Point

< Conditions >

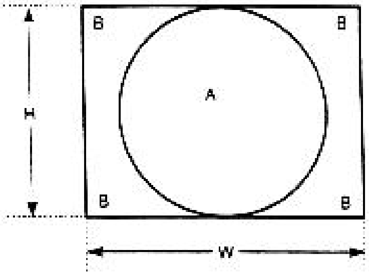
Display image : White flat field at the center of the display area.

Luminance : Brightness Center.

Luminance	17 ~ 100 cd/m²
Value	9300K + 27 MPCD $x = 0.281 \pm 0.020$ $y = 0.311 \pm 0.020$

5.7.7 Misconvergence

Center area of display	(A) : 0.30 mm (Max.)
Corner area of display	(B) : 0.40 mm (Max.)



<Conditions>

Display image : Crosshatch pattern mixed with R, G and B colors.

Convergence gauge : KLEIN CM7AG

Display image : W x H 380 x 285mm

5.7.8 Purity

Conspicuous mis-landing shall not be visible within the display area at a distance of 60cm from CRT surface.

Conditions:

Display image : White flat field

Luminance : Contrast max, Brightness Center.

5.7.9 Jitter

Invisible at a distance of 60 cm from CRT surface.

Conditions:

Display image : White flat field

Luminance : Contrast max, Brightness Center point.

6. ENVIRONMENTS

6.1 Ambient temperature, humidity and altitude

	Operating	Storage and shipment
Temperature	0°~40°C (32°~104°F)	-20°~+60°C (-4°~140°F)
Humidity	5~90%*	5~90%*
Altitude	3,000m (Max.) (10,000 ft)	12,000m (Max.) (40,000 ft)

*Non-condensation

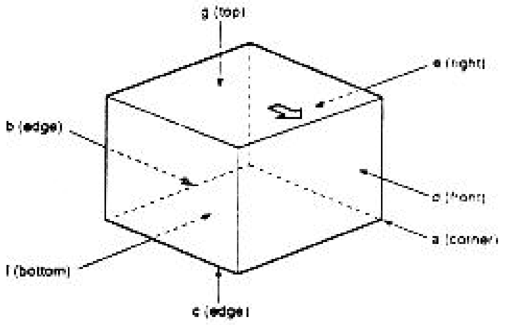
6.2 Vibration and shock

(1) Vibration

	Order of tests	Direction of vibration		Acceleration Non-operation	Acceleration Storage and shipment	Frequency	Sweep	Test time
Unpacked	1	Vertical	Up to down	2.9 m/s^2 (0.3 G)		5 - 55 Hz	120 S	30 min.
	2	Horizontal	Front to back					15 min
	3		Right to left					
Packed	1	Vertical	Up to down		10m/s^2 (1.0 G)	5 - 50 Hz	Logsweep 810 S	40 min.
	2	Horizontal	Front to back		5 m/s^2 (0.5 G)			20 min
	3		Right to left					

(2) Shock (Drop test)

Unpacked	20 G One time for each face (6 faces) (non-operation)			
Packed	Order of drop	Face to drop is to face the floor. (see the figure)	Height	Number of drop
	1	a, b, c, d, e, g	45cm	1 time for each
	2	f	50cm	



7. REGULATORY STANDARDS

7.1 Safety standards, Applicable standards

UL 1950, Listing
CAS 22.2 No. 950, Products Certification
TuV (IEC-950)/GS (ZH1)
DHHS, 21 CFR subchapter J, X-Ray Radiation
PTB, X-Ray Radiation, Approval
HWC

7.2 EMC standards

Designed to meet following standards
VCC I class II
FCC: FCC part 15, subpart B, class-B
VDE 0878/06.83
Vfg 243/1991
CISPR22 class B
MPR-II Radiation

8.0 Power Cord

UL and CSA approved AC power cord is put in package. Length : 2.0 meter if you use in other country (for example Germany), please use a power cord approved by safety agency of each country (VDE in Germany).

9.0 Signal Cable

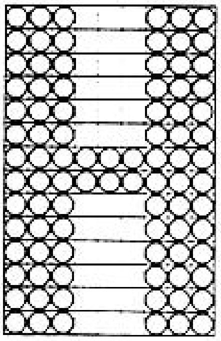
Signal cable with Mini D-Sub 15P connectors at both end is put in package.
Length : 1.5 meter

10.0 Reliability

> 55,000 hrs (Demonstrated MTBF)

<EMI test pattern>

White, full "H" characters (9 x 14 dots), block (12 x 24 dots) "H" character font is as follows



8. COLOR CRT DEFECTIVE STANDARD

8.1 Specification of screen blemishes

This instruction is applied to inspection of the screen faults and of the glass quality of the faceplate.

8.2 Test procedure

8.2.1 Tests are to be done under the following two conditions:

a) With the white raster of 34 cd/m^2 (10 lux) or monochrome raster (component monochromatic raster for causing the white raster to appear) in the center of 9,300K + 27 MPCD image observed at ambient light intensity of about 10 lux during operation.

b) A flaw is observed under the light of about 200 lux when the set is not in operation.

8.2.2 Viewing distance should be 60 cm (23.62") minimum. Faults not visible at this viewing distance are permitted.

8.2.3 The Following quality areas are specified

Zone A: A rectangular area (sides X and Y) Of which the point of intersection Of the diagonals coincides with the mechanical center of the screen

	Screen size	
	X	Y
Zone A	366mm (14.4")	275mm (10.8")

Zone B. The remaining screen area except zone A.

8.2.4 Remarks concerning faults:

a) Unless otherwise specified, the size of a fault is the smallest value found with one of the two formulas:

$$\frac{a+b}{a} \text{ or } \frac{a}{20} + 2b \text{ (a = length, b = width)}$$

b) The dot signal end clogging area defined as not being a chipping in excess of 1/2.

8.3 Permissible limit

8.3.1 Screen faults

(1) Missing phosphor dots

Type of Flaw			Tolerable Quantity		Minimum Distance (mm)
			Zone A	Zone B	
1 trio			1	2	20
2 adjacent dots (same color)			0	1	20
2 adjacent dots (each color)			1	1	20
1 dot	Green phosphor dot		3	2	20
	Yellow phosphor dot		5	4	
	Red phosphor dot		5	4	
Deformation, blemishes, and other faults	Average diameter (mm)	0.51 - 0.75	0	1	20
		0.11 - 0.50	1	1	

8.3.2 Glass faceplate defects

(1) Air bubbles, spot, stains and elongated air bubbles.

Average Diameter (mm)	No. of Allowable Faults			Minimum Distance (mm)
	Zone A	Zone B	A + B	
0.76 -	0	0	0	30
0.51 - 0.75	0	1	1	
0.26 - 0.50	2	3	5	
0.11 - 0.25	—	—	—	Not more than 5 dots must not exist within a diameter of 10mm

Scratches (Glass and Coating)

Width	Zone A + B	Total of One Product	Minimum Mutual Distance between Flaws
More than 0.16 mm	Must not exist	—	—
0.11 - 0.15 mm	13 mm long or less	65 mm	33 mm
0.06 - 0.10 mm	26 mm or less	65 mm	17 mm
Less than 0.05 mm	No limit to length	No limit	4 mm

(2) Other defects not stated above such as chips, cracks, bruises, shear marks, clouds and polished patterns are not allowed when they substantially spoil appearance viewed from the viewing distance.

8.4 AR coating flaw standard

8.4.1 Test procedure

(1) External quality (appearance):

Place a bulb on the inspection bench and throw a white fluorescent light over it. The face glass surface light intensity shall be 1,000 lux to 1,500 lux in this case.

(2) Observing distance:

Observation shall be made at a 40 cm distance. Flaws invisible at this distance should be ignored.

(3) Zone classification:

Zone A: The inner area of a rectangle with horizontal dimension of 320 mm and vertical dimension of 240 mm with the image center taken as its center.

Zone B: The inner area on the fluorescent surface end outside Zone A.

Zone C: The area outside the fluorescent surface end.

(4) Flaw size:

The smaller of the two below shall be taken.

$\frac{\ell + b}{2}$, $\frac{\ell}{20} + 2b$ (ℓ = length, b = width)

8.4.2 Flaw criteria

(1) Scratches

Width (mm)	Maximum Allowable length (mm)
< 0.05	Permitted
0.06 - 0.10	26.0
0.11 - 0.15	13.0
> 0.16	Rejected

* A scratch in excess of 0.16 mm in width is taken as a blemish if its contrast is extremely low. The standard given in (2) applies in this case.

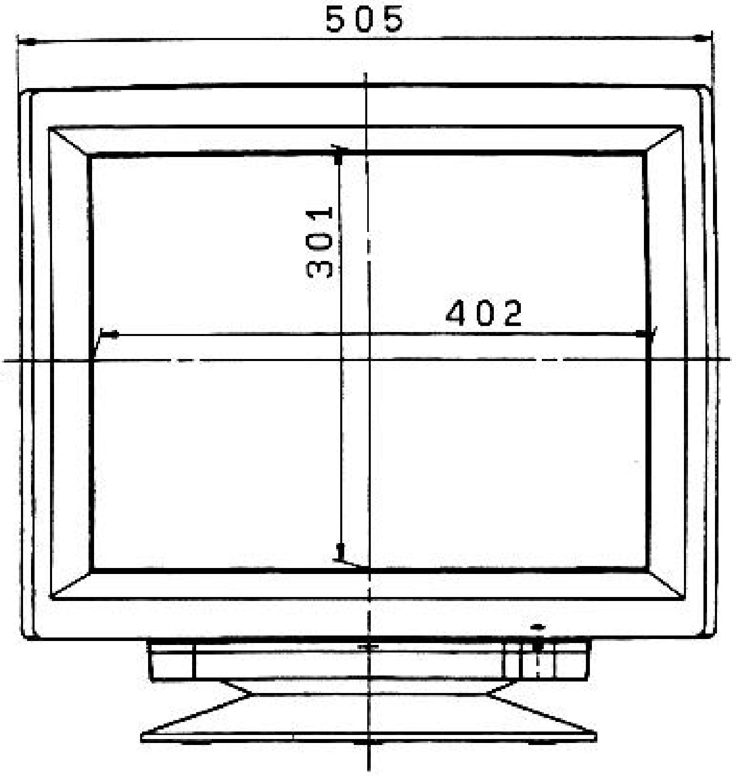
(2) Opaque Flaws Such as Stain and Coating Peel-off

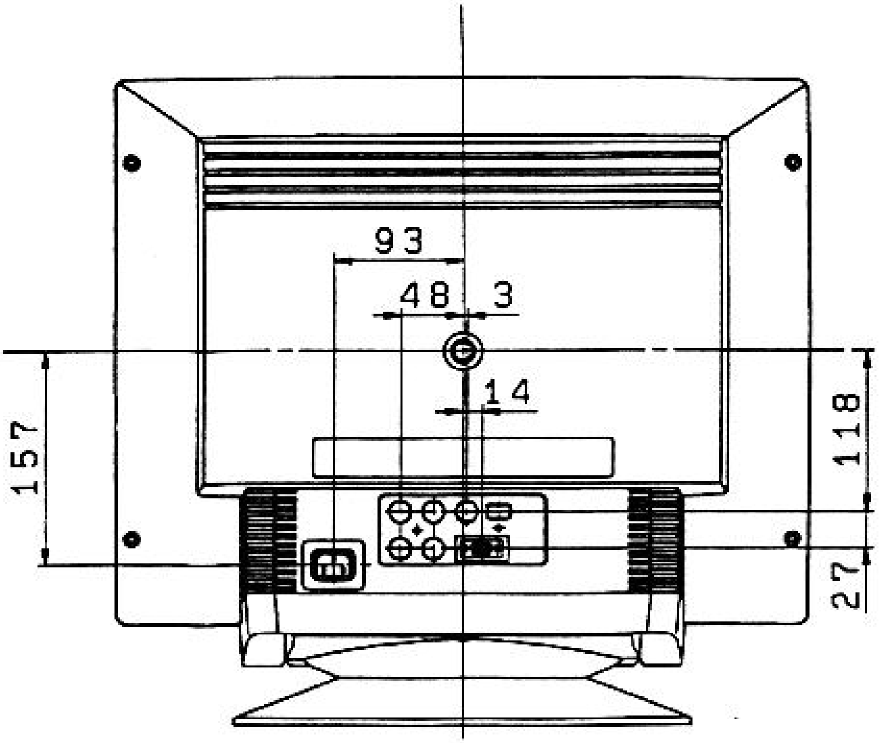
Flaws are classified according to the contrast, and judgment is formed based on the size for each contrast.
The contract classification is defined as below.

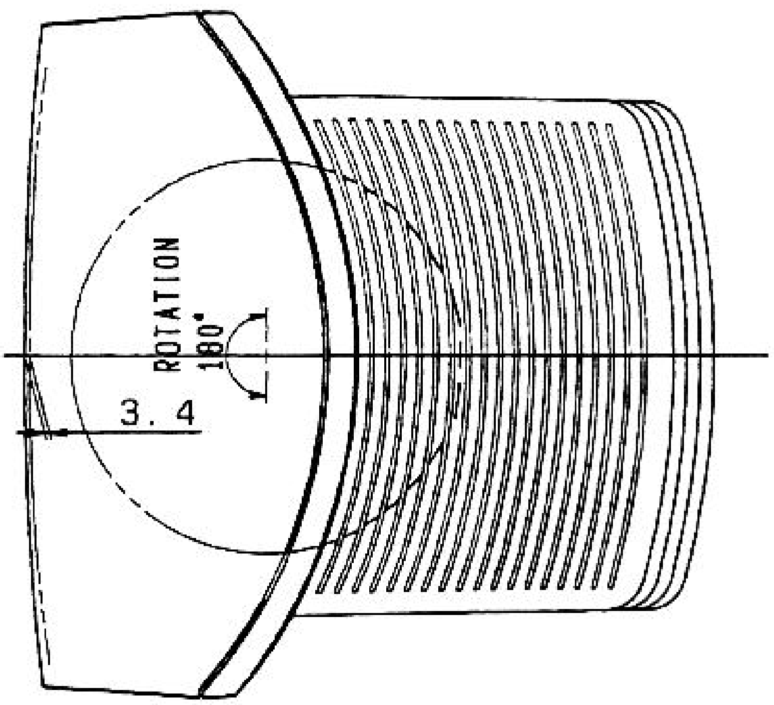
- High contrast:
  Foreign matters such as graphite and dirt which obstruct the light from the fluorescent surface, and coating peel-off.
- Medium contrast:
  Semi-transparent foreign matters and blemishes.
- Low contrast:
  The light from the fluorescent surface little differs, but slight blemish and other flaws which cannot be visually identified.

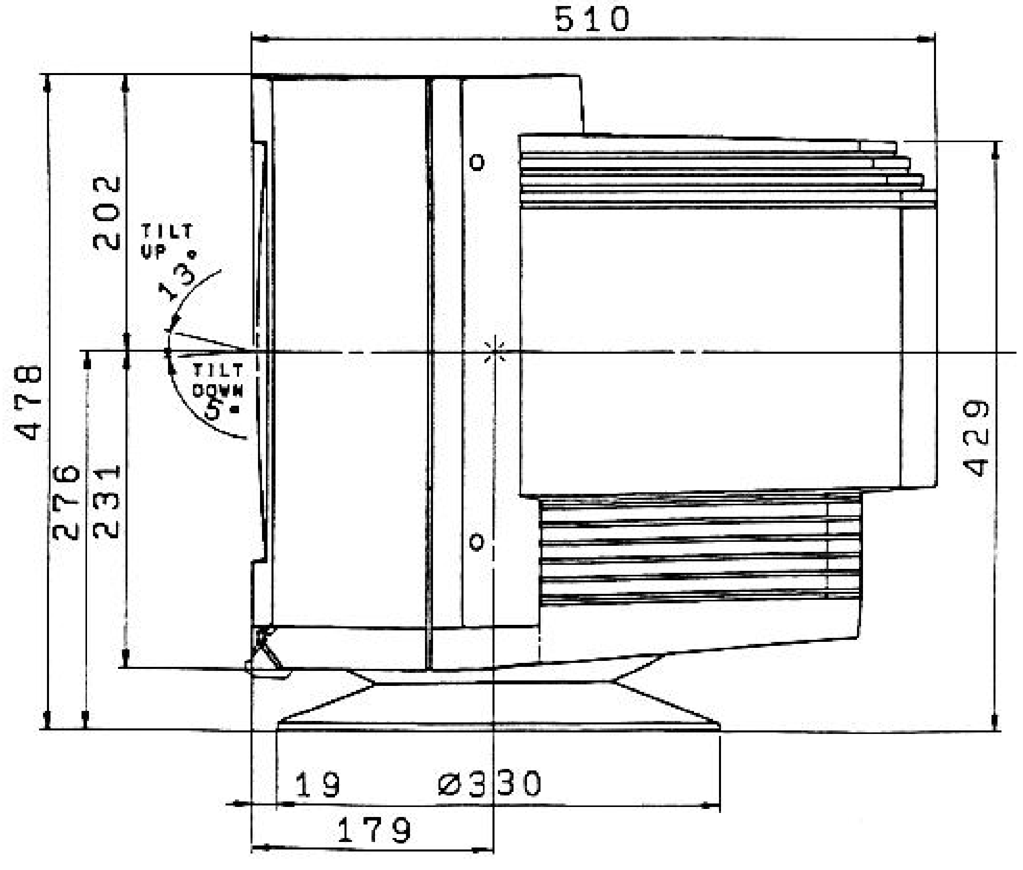
Average Diameter by Contrast (mm)			No. of Tolerable Quantity by Zone		Tolerable Distance (mm)
High Contrast	Medium Contrast	Low Contrast	Zone A	Zone B	
Below 0.10	Below 0.20	Below 0.50	(Judgment is not formed on the basis of quantity, but dots shall be less than five within a circle of 10 mm in diameter.		Blemishes must not be concentrated.
0.11 - 0.25	0.21 - 0.50	0.51 - 2.50	2	4	20
0.26 - 0.50	0.51 - 1.00	1.26 - 2.50	1	2	40
0.51 - 0.75	1.01 - 1.50	2.51 - 3.75	0	1	80

DIMENSIONS




93
48
3
14
157
118
27


ROTATION
180°
3. 4

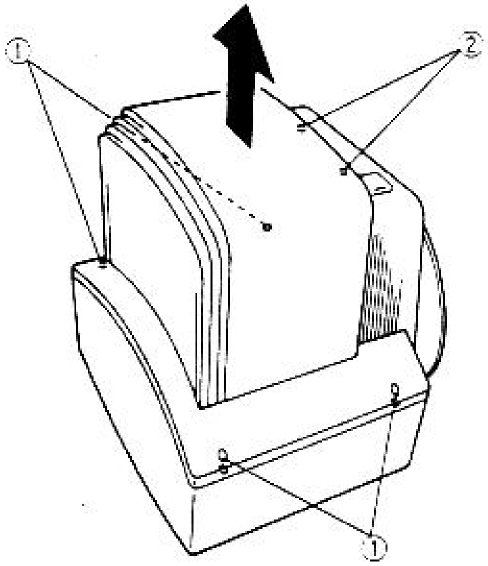

TILT UP
13°
TILT DOWN
5°
Ø330

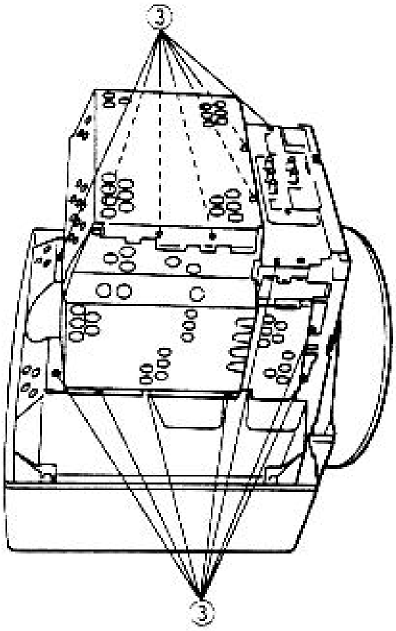
DISASSEMBLY INSTRUCTIONS

1. Rear cover removal

Note: Spread a mat underneath to avoid damaging the CRT surface.

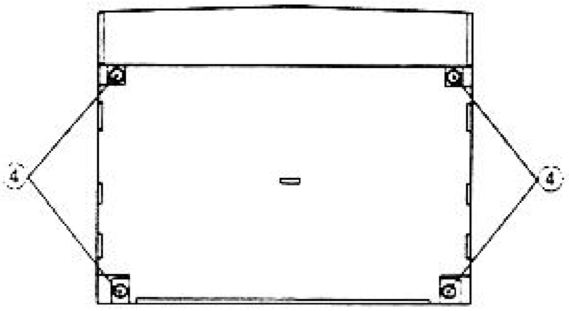
1) Remove for large screws ① and two small screws ② from the rear cover.
2) Remove the cover.
3) Remove 14 screws ③ from the shield case.
4) Remove the shield case.



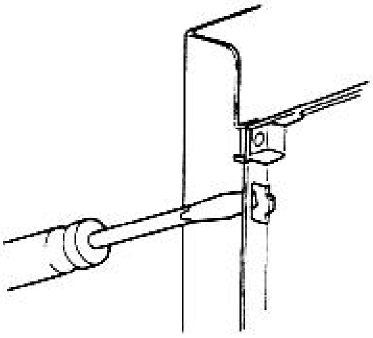


2. Video PCB removal

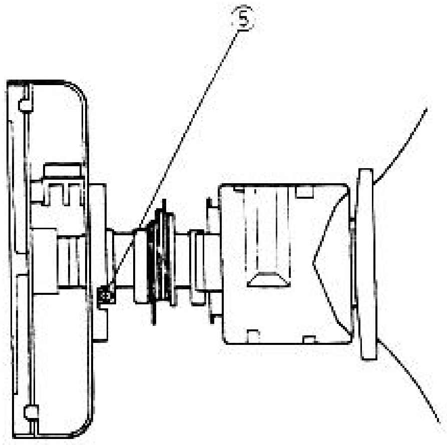
1) Remove four screws ④ securing the shield cover.
2) Remove the shield cover (A).

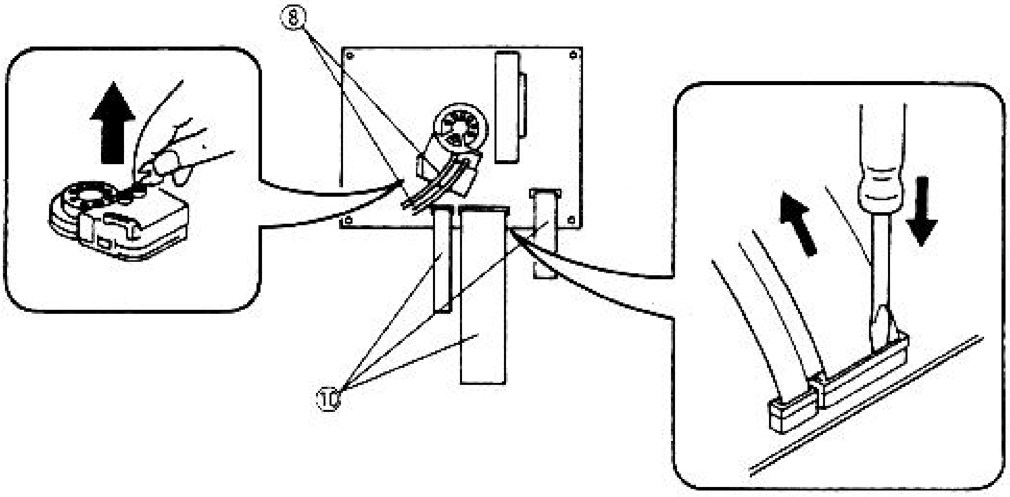


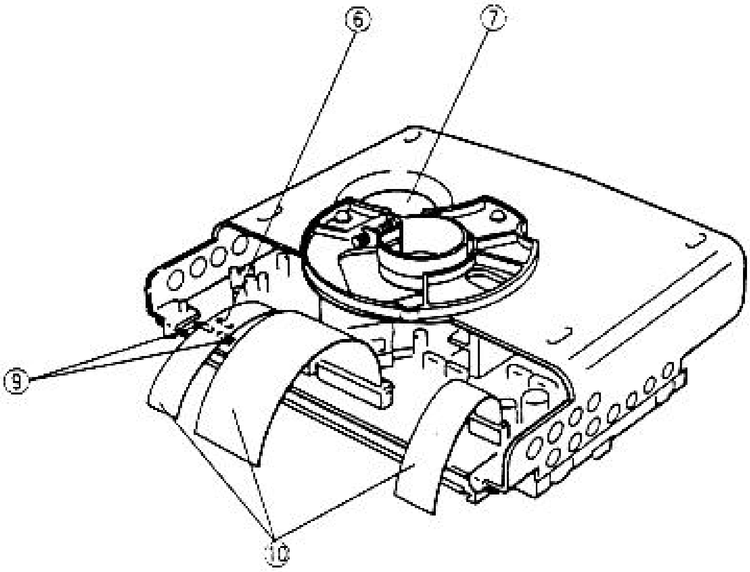
(A)



3) Loosen the screw ⑤ securing the CRT neck and the shield case.
4) Remove the PCB block from the CRT
5) Remove the N10B connector ⑥.
6) Remove the N382B connector ⑦.
7) Remove two focus leads ⑧ after pulling up the focus lead securing lever.
8) Remove two ground connectors ⑨ (N105 and N106) connected to the PCB.
9) Remove three flexible PCBs ⑩.
10) Remove the PCB from the shield case.

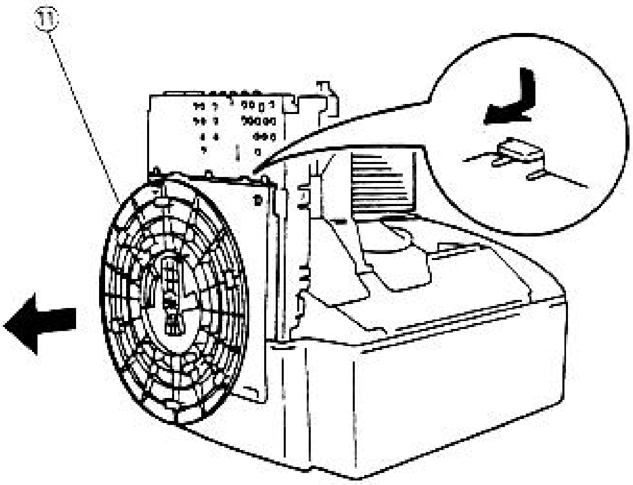


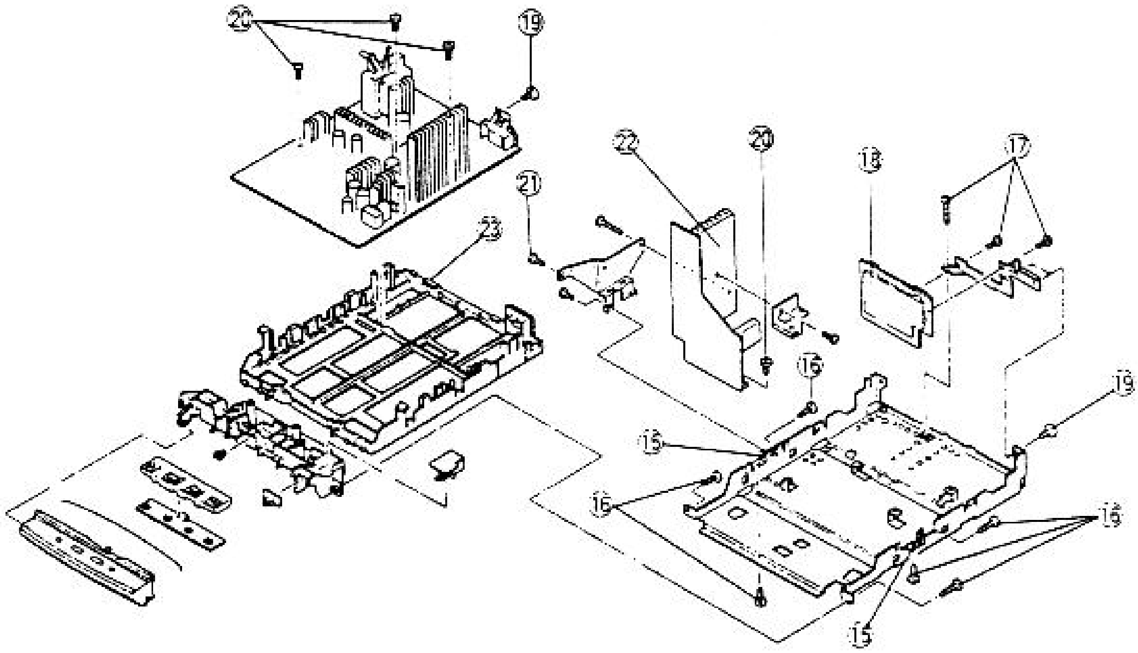


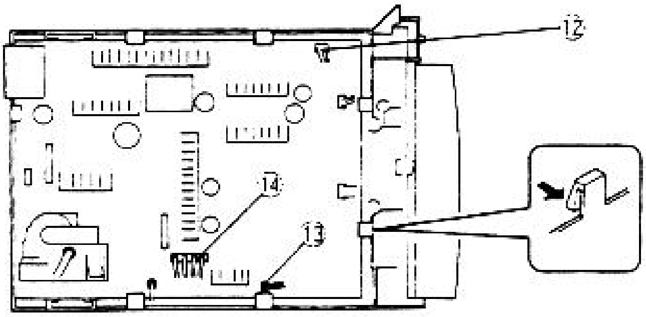


3. Main PCB Removal

1) Remove the pedestal ⑪.
2) Remove the connector ⑫ (N802) of the degauss coil.
3) Remove the connector ⑬ (N101) of the tilt coil.
4) Remove the DY connector ⑭.
5) Remove the anode cap.
6) Remove two ground connectors ⑮.
7) Remove six screws ⑯ securing the bottom fitting metal.
8) Remove the fitting metal and the PCB from the cabinet.
9) Remove three screws ⑰ securing the fitting metal
10) Remove the signal connector PCB ⑱.
11) Remove two screws ⑲ securing the AC inlet connector.
12) Remove four screws ⑳ securing the fitting metal and PCB.
13) Remove one screw ㉑ securing the fitting metal and heat sink.
14) Remove the SUB-PCB ㉒.
15) Remove the holder ㉓ from the fitting metal and PCB with the figure referenced.







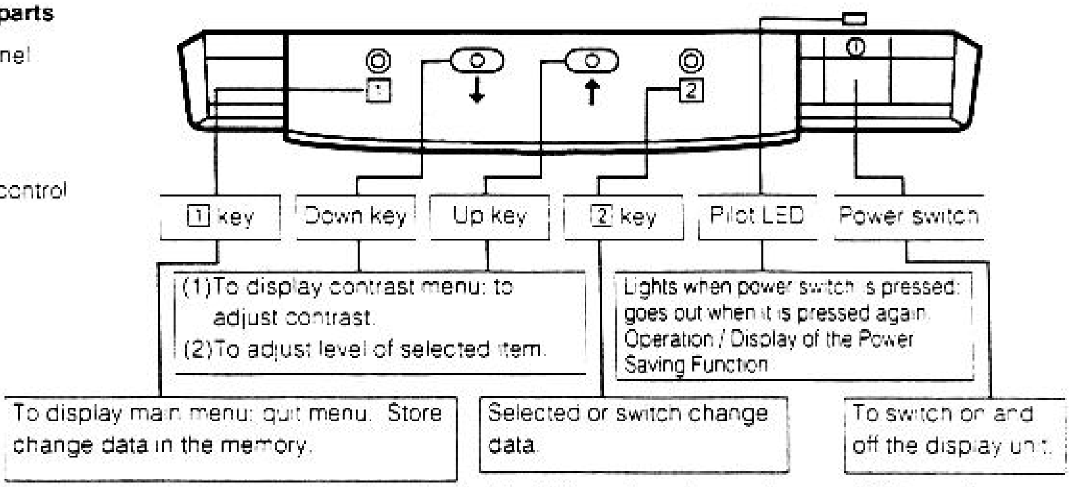
CONTROL LOCATION

Basic operation of parts

Control panel

Names of control

Functions



1 key
Down key
Up key
2 key
Pilot LED
Power switch

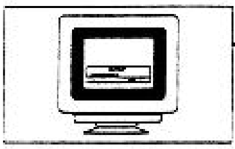
- 1 key: To display main menu: quit menu. Store change data in the memory.
- Down key / Up key: (1)To display contrast menu: to adjust contrast. (2)To adjust level of selected item.
- 2 key: Selected or switch change data.
- Pilot LED: Lights when power switch is pressed: goes out when it is pressed again. Operation / Display of the Power Saving Function
- Power switch: To switch on and off the display unit.

* For a detailed description of the functions of the 1 key, down key, up key, and 2 key, refer to the next section onward.

Examples of on-screen operation

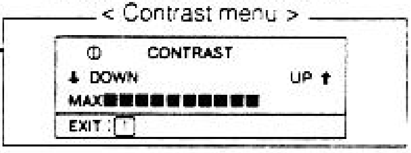
A. Contrast adjustment

Display changes — Steps of operation — On-screen display changes

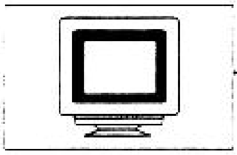


1. Display the contrast adjustment menu using the ↓ key or ↑ key.

< Contrast menu >



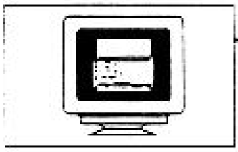
CONTRAST
↓ DOWN
UP ↑
MAX
EXIT : 1



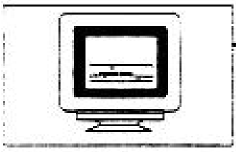
2. Set the desired state using the ↓ key or ↑ key. If the 1(EXIT) key is pressed or if no key is pressed for about 20 seconds, the set data is stored in the memory and the menu screen is cleared.

B. H. size adjustment

Display changes — Steps of operation — On-screen display changes

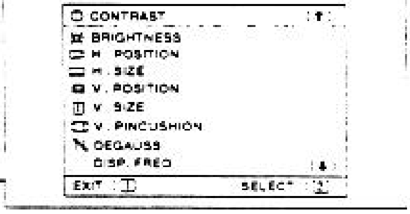


1. Call the main menu on the screen by pressing the 1 key.

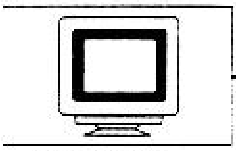


2. Move to cursor to H. SIZE using the ↓ key or ↑ key, then press the 2 key to select

< Main menu >



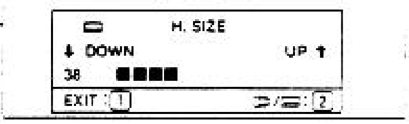
CONTRAST (↑)
BRIGHTNESS
H. POSITION
H. SIZE
V. POSITION
V. SIZE
V. PINCUSHION
DEGAUSS
DISP. FREQ (↓)
EXIT : 1
SELECT : 2



Main menu

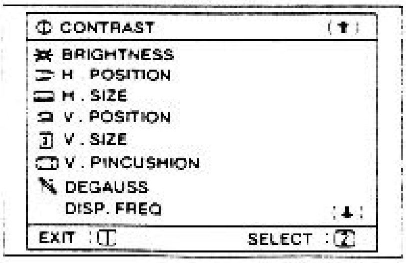
3. Set the desired state using the ↓ key or ↑ key. If the 1(EXIT) key is pressed or if no key is pressed for about 20 seconds, the set data is stored in the memory and the menu screen is cleared.

< Sub menu >



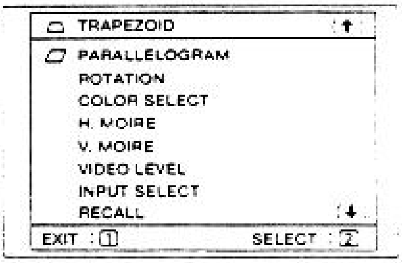
H. SIZE
↓ DOWN
UP ↑
38
EXIT : 1
2

< Page 1 >



CONTRAST (↑)
BRIGHTNESS
H. POSITION
H. SIZE
V. POSITION
V. SIZE
V. PINCUSHION
DEGAUSS
DISP. FREQ (↓)
EXIT : 1
SELECT : 2

< Page 2 >



TRAPEZOID (↑)
PARALLELOGRAM
ROTATION
COLOR SELECT
H. MOIRE
V. MOIRE
VIDEO LEVEL
INPUT SELECT
RECALL (↓)
EXIT : 1
SELECT : 2

CAUTION FOR ADJUSTMENT AND REPAIR

1. Degaussing is inevitably required at purity adjustment or convergence adjustment.
2. If you check or adjust electrical specification or function, more than 20 minutes burn-in is required.
3. Reforming of the lead wire is required after your repair work.
4. Prior to starting work, be sure to check that the input signal is at the specified timing and that the polarity is as specified in all modes.
5. Brightness control: brightness tends to decrease about 5 cd/m² at the white window and about 1 cm/m2 in the white raster after mounting the rear cover in position. This should be taken into consideration.
6. Brightness stabilizing time: It takes about 20 to 50 seconds for the brightness to stabilize after turning the power off for 5 seconds (AC). Therefore, care should be taken to this.
7. Aging should be made in white raster of 30 ~ 50 cd/m2 and raster size, 402 x 301 mm before adjusting the ITC.
8. Set the CONTRAST to MAX and BRIGHTNESS to CENTER using the O.S.D.

CAUTION FOR SERVICING

When servicing or replacing the CRT, high voltage sometimes remains on the anode. So, completely discharge high voltage before servicing or replacing the CRT so as to prevent a shock to the serviceperson.

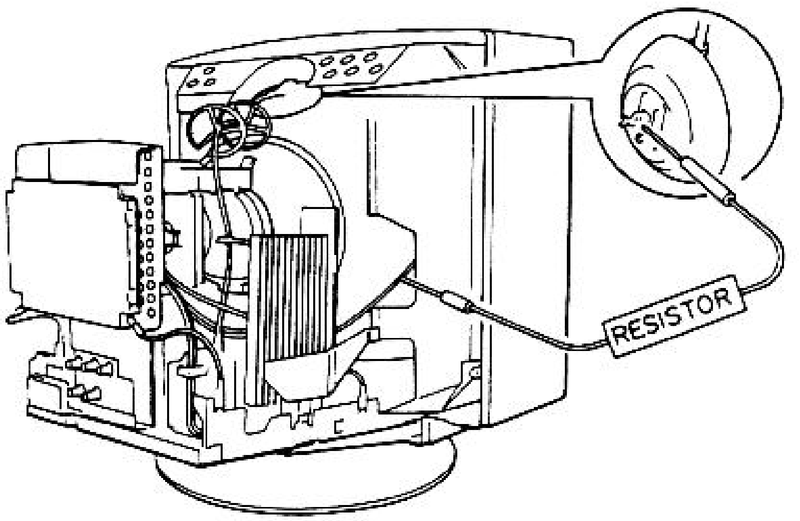
CRT Anode Discharge

1. When you check the CRT anode or replace the CRT, discharge the CRT anode to the external conductive coating (aquadag) of CRT, especially when checked right after power turn-off.
2. Ground one end of a jumper wire which has a resistor (30kV < resisting pressure 100MΩ) and connect the other point to the CRT anode.

Note: Grounding must be done first.

This model has a section that does not share a common ground with the power supply section. The different sections are referred to as the HOT section and the COLD section in the precautions below.

1. Do not touch the HOT section and the COLD section at the same time. You may be hit by an electric shock.
2. Do not short the HOT section to the COLD section. This could blow the fuse or damage parts.
3. Never measure the HOT section and the COLD section at the same time when using tools such as oscilloscopes or multimeters.
4. Always unplug the unit before beginning any operation such as removing the chassis.



ADJUSTMENT AND CHECK PROCEDURE

INTRODUCTION

- This monitor is controlled by microcomputer. With the exception of a part of purity/convergence/focus, all is digitally adjusted.
  Therefore, the computer/dedicated control software/interface/9~12V power supply/signal generator are required for servicing.

TOOL REQUIRED

- **Computer**
  Control software is compatible with IBM PC. Therefore, it is suggested to use a computer which has compatibility with IBM PC.

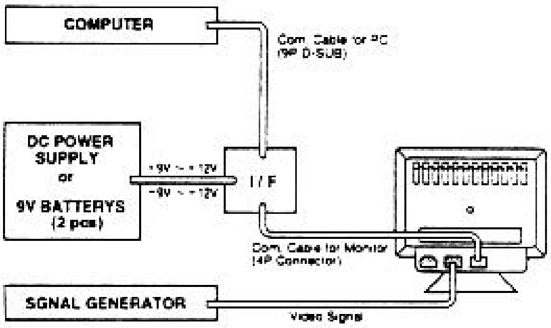
- **Control Software**
  The control software uses a 3.5" floppy disk. Therefore, the 21PS chassis can only use "2182PS adjustment program disk" and no other disk can be used on this chassis.

- **Interface**
  Just as in the case of the control software, this interface is not commercially available on the market. You are requested to obtain this interface by writing or cabling directly to our Monitor Production Sales Division.

- **Power Supply**
  A DC 9~12V (+9~12V/-9~12V) power supply is required for operating the interface

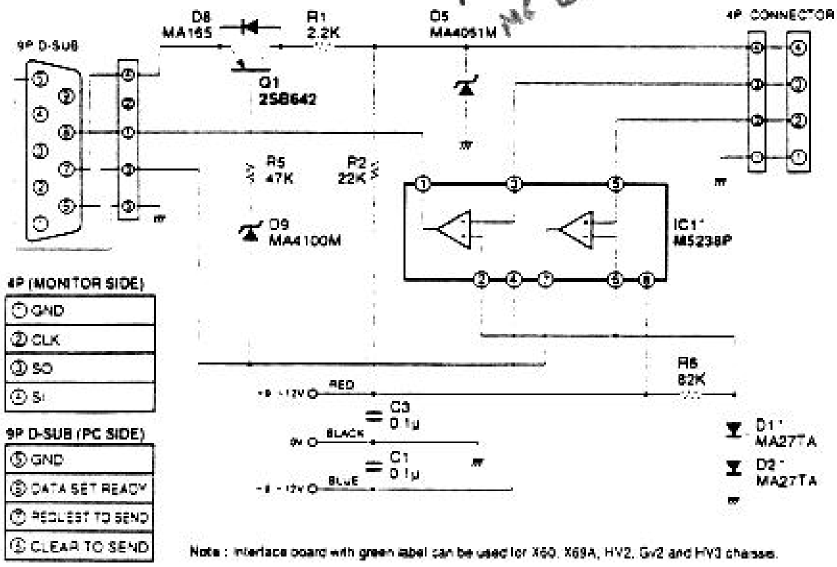
- **Signal Generator**
  It is necessary for you to use a signal generator which operates on fh 82 KH$_Z$, fv 160 H$_Z$, and fc 135 MH$_Z$ bands.

INTERFACE CONNECTION

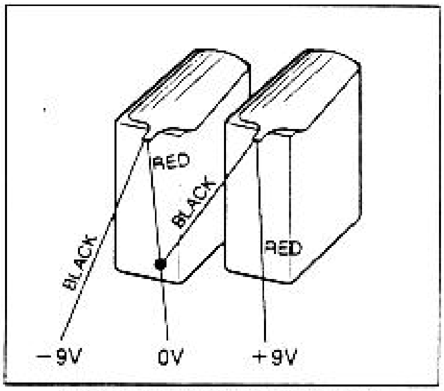

COMPUTER
Com. Cable for PC (9P D-SUB)
DC POWER SUPPLY or 9V BATTERYS (2 pcs)
+9V ~ +12V
-9V ~ -12V
I / F
Com. Cable for Monitor (4P Connector)
SGNAL GENERATOR
Video Signal

интерфейс
82 [illegible]
mitsu[illegible]
[illegible]
[illegible] 5237
М6 2082

INTERFACE SCHEMATIC DIAGRAM


9P D-SUB
D8 MA165
R1 2.2K
D5 MA4051M
4P CONNECTOR
Q1 2SB642
R5 47K
R2 22K
D9 MA4100M
IC1* M5238P
R6 82K
+9 ~ 12V RED
C3 0.1μ
0V BLACK
C1 0.1μ
-9 ~ 12V BLUE
D1* MA27TA
D2* MA27TA
4P (MONITOR SIDE)
① GND
② CLK
③ SO
④ SI
9P D-SUB (PC SIDE)
⑤ GND
⑥ DATA SET READY
⑦ REQUEST TO SEND
⑧ CLEAR TO SEND

Note : Interface board with green label can be used for X60, X69A, HV2, GV2 and HV3 chassis.


RED
BLACK
BLACK
RED
-9V
0V
+9V

BATTERY CONNECTION

Parts No.	No. green label	with green label
IC1*	M5223	M5238P
D1*	MA162	MA27TA
D2*	MA162	MA27TA

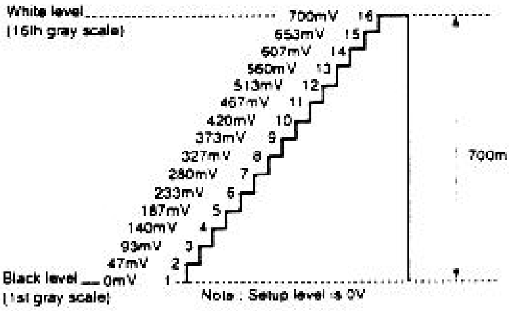
OTHER TOOLS

- Oscilloscope (dual trace)
- Scope probe – Attenuation: 100:1
  Attenuation: 10:1
- Digital Voltmeter – Range: 0 to 1000V DC
  Accuracy: 0.1%
- TV color Analyzer II – that reads luminance and chromaticity X and Y coordinates.
- Digital High Voltmeter
- AC power supply – Output voltage : 0 to 300V
- Degaussing coil
- Convergence meter
- Scale
- Double-faced scale
- Microscope – Scale factor: 50
- White racquer (Paint)

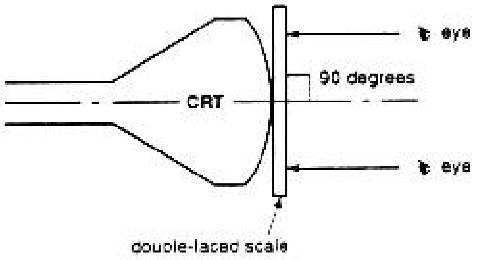
STANDARD CONDITION OF ADJUSTMENT PROCEDURE

- Signal timing : Standard timing 1024 x 768 (See page 5)
- Display pattern : White, full "H" character
- Signal level : V/H: TTL level video: 700mV
- Input source : AC 120V, 60 Hz
- Ambient temperature : Room temperature
- Warm-up time : More than 30 minutes
- Brightness control : Center
- Contrast control : Max.
- Magnetic field : Vertical: 40 μT
  Horizontal: 0 μT
- Signal cable : Attached

Video input signal from PC.



- Use a Helmholtz device to adjust an unit with no horizontal magnetic field and a vertical field of 40 μT. Inspect the unit under the same conditions.
- The ambient illuminance must be 200 lux.
- Use an external degaussing coil any time the DEGAUSS switch does not remove color shading.
- To check the image width, height, linearity and distortion, proceed as below.



Measure level with respect to tube axis

ADJUSTMENT SOFTWARE

1. Software operating procedure

1) Power on the computer.
2) Connect the Communication cable for monitor adjustment.
3) Insert the adjustment disk into the drive.
4) At the A:> prompt type "VSR" , then press [ENTER].
5) Refer to the adjustment procedures.

2. Adjustment Program

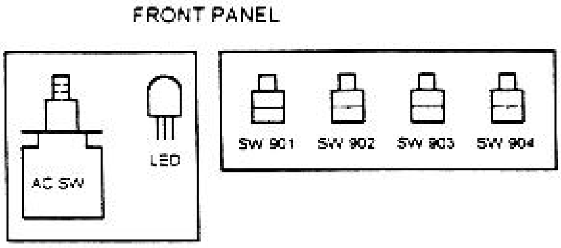
Main Menu of Adjustment Program

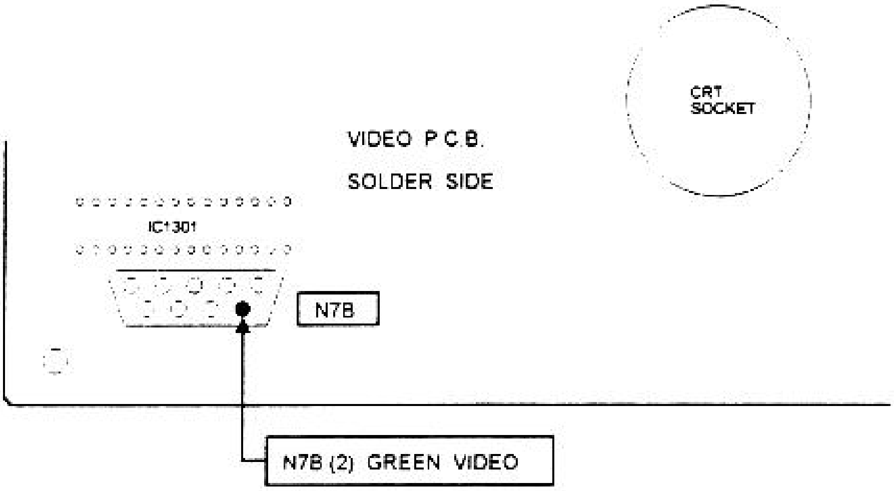
```
        <<HV4 ADJUST PROGRAM MAIN MENU>>  (e: exit)          <Ver *.*>
        1)  Load data from FILE                    6)  Clear User preset
        2)  Adjust H. OSC freerun                  7)  Save data to FILE
        3)  Adjust VSR setting                     8)  Special ADJUST
        4)  Adjust OTHER setting                   9)  Information Service
        5)  Adjust Factory preset                 10)  Show Version & Error
```

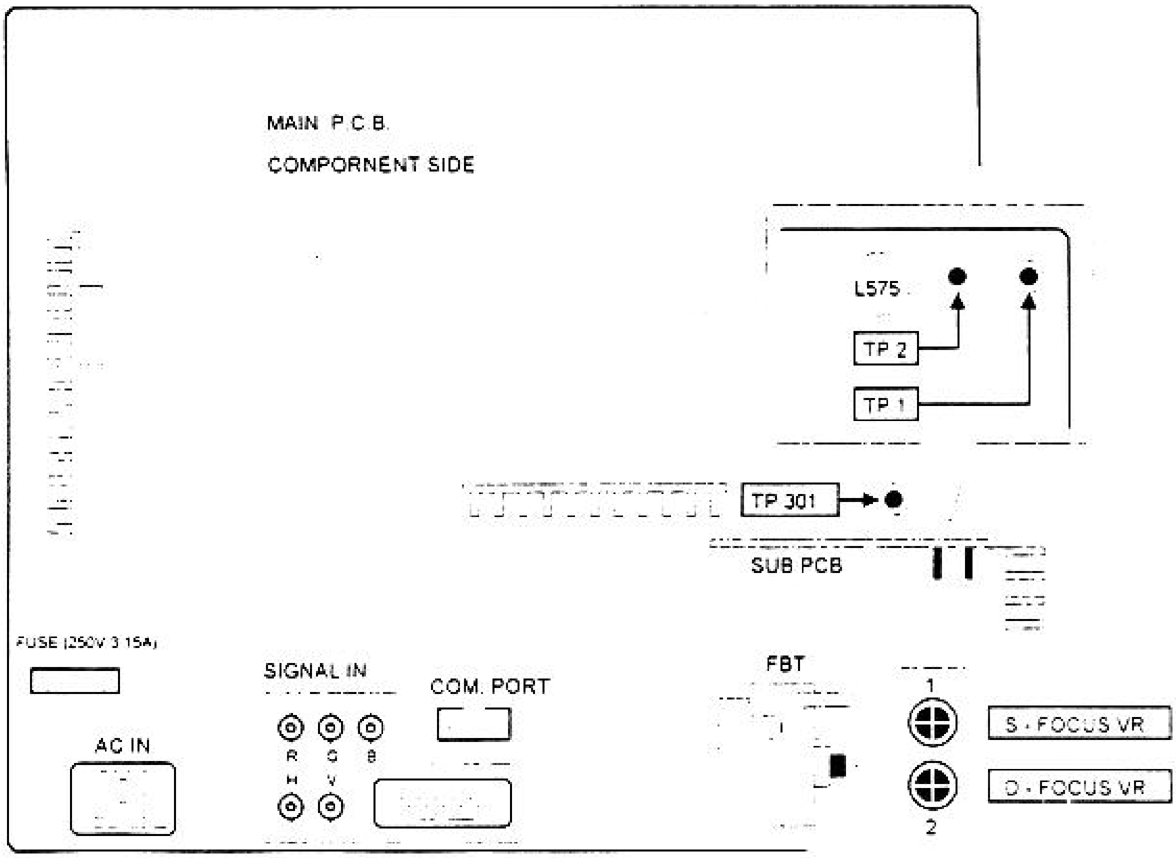
Description of Function of Each Menu

1) **Load Data from File**
   Transfer the contents of the data file of the disk to the monitor and update the contents of EEPROM forcedly.
   When the data of the EEPROM is damaged for some reason or other, a return to the initial state can be made easily by using the function from the original data.
2) **Adjust H. OSC Freerun**
   To guarantee the operation in the follow-up possible horizontal frequencies, the reference oscillation frequency can be automatically set by making the microcomputer reference it.
3) **Adjust VSR Setting**
   To guarantee the operation in the follow-up possible horizontal frequencies, the reference voltage to be referenced by the microcomputer and the distortion offset reference data should be set.
4) **Adjust Other Setting**
   This is used to control the brightness and color.
5) **Adjust Factory Preset**
   Makes the control at the time of preset mode, and the microcomputer is referenced when operating the partial data in modes other than the preset mode.
6) **Clear User Preset**
   Clear the data written in the user preset domain. Nothing is written in this domain when shipping the product from factory.
7) **Save Data to File**
   Transfer the data of the EEPROM of the monitor to a data file in a desired file name.
8) **Information Service**
   Displays the H/V frequencies of the signal fed to the monitor, and the operation status on the monitor of the PC side.
9) **Show Version and Error**
   ① Return the microcomputer version to the PC.
   ② If there is an error in monitor operation, the contents of that error are returned to the PC.

SERVICE ADJUSTMENT CONTROL LOCATION


FRONT PANEL
AC SW
LED
SW 901
SW 902
SW 903
SW 904


CRT SOCKET
VIDEO P.C.B.
SOLDER SIDE
IC1301
N7B
N7B (2) GREEN VIDEO


MAIN P.C.B.
COMPORNENT SIDE
L575
TP 2
TP 1
TP 301
SUB PCB
FUSE (250V 3.15A)
AC IN
SIGNAL IN
R
G
B
H
V
COM. PORT
FBT
1
2
S - FOCUS VR
D - FOCUS VR

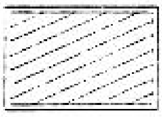
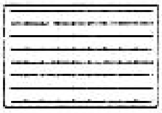
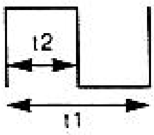
REQUIRED ADJUSTMENT PROCEDURE AFTER A PARTS IS REPLACED (✓ IS REQUIRED)

ADJUSTMENT ITEM		REPLACED PARTS															
		MAIN P.C.B.	VIDEO P.C.B.	CRT DY	IC1301 IC1302 IC1303 Q1075 Q1175 Q1275 IC1385	Q1001 Q1004 Q1005 Q1101 Q1104 Q1105 Q1201 Q1204 Q1205	IC330 IC351 Q295 Q330	IC470 IC490 Q484 Q494 Q495	IC501 IC503	IC461 IC476 Q470 Q472	IC301 IC302 Q301 Q302 Q304 Q305 Q306 Q307 Q319	IC550 IC580 IC581 Q549 Q550 Q717 Q719	Q850 Q851 Q852 Q853 Q854 Q853	IC581 Q581 Q582 Q583 Q584 Q585	IC635 IC660 Q644 Q644 Q672 Q673 Q674	Q675 Q676 Q680 Q690	IC902
(A)	DATA SETTING *	✓															✓
(B)	H FREE RUN	✓							✓								✓
(C)	H DRIVE DUTY	✓										✓	✓		✓	✓	✓
(D)	H DRIVE +B	✓										✓	✓		✓	✓	✓
(DA)	EHT	✓		✓								✓	✓		✓	✓	✓
(E)	DAF	✓									✓						✓
(F)	FOCUS	✓		✓							✓						✓
(G)	H CENTER	✓		✓										✓	✓	✓	✓
(H)	H V. SIZE / POSI V PCC (1)	✓		✓				✓	✓	✓		✓	✓		✓	✓	✓
(I)	V PCC	✓		✓								✓	✓				✓
(J)	V LIN (C)	✓		✓				✓		✓							✓
(K)	H V SIZE / POSI V.PCC (2)	✓		✓				✓	✓	✓		✓	✓		✓	✓	✓
(L)	H V SIZE / POSI V PCC (3)	✓		✓				✓	✓	✓		✓	✓		✓	✓	✓
(M)	BRIGHTNESS, COLOR	✓	✓	✓	✓	✓	✓								✓	✓	✓
(N)	ABL	✓	✓	✓	✓	✓	✓								✓	✓	✓
(P)	INPUT 1 0V SETTING	✓	✓	✓	✓	✓	✓										✓
(Q)	H SIZE LIMITER SETTING	✓		✓					✓			✓	✓		✓	✓	✓
(R)	FINAL SETTING	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(T)	DATA SAVING																
	PURITY & CONVERGENCE			✓													
	SCREEN CHECK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

*** (A) DATA SETTING : Do not load standard data except when main P.C.B. and IC902(EEPROM) are replaced.**

ADJUSTMENT PROCEDURE

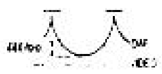
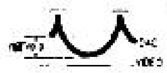
1. Description of Adjustment Method

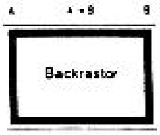
	Item Program Menu	○ Test Meter ▼ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
A	DATA SETTING		A1	OFF	Turn the power on, but do not connect the signal cable	
			A2		Press [⏎] by setting the cell to the menu at left.	
	1) Load data from FILE		A3		A message FILE -> EEPROM FILE NAME (q or Q escape) [ ] is displayed. So key in the **DACDATA.DAT** (when using the standard data) and press [⏎].	
			A4		**Note:** To make the transferred data effective, turn the power of the monitor off once and turn it on once again.	
	Do not load standard data except when main P.C.B. and IC902 (EEPROM) are replaced.					
B	H FREE RUN		B1		Press [⏎] by setting the cell to the menu shown at left.	
			B2		Set the cell to the adjusting mode INTP[0] and press [⏎].	
		☐ Crosshatch	B3	-1	Check to be sure that the input signal to the monitor set is [fH 29.5kHz] and [fV 48.0Hz] and press [⏎]	
	2) Adjust H. OSC freerun		B4		When the screen image has stabilized, press [E] and return the image to the screen image of B2. <The same as B2, B3, and B4 except for the adjusting mode/signal >	↓ (Automatic adjustment)
			B5	-2	Adjusting mode INTP[1] Input signal [fH 39.0kHz] [fV 77.1Hz]	
			B6	4	Adjusting mode INTP[2] Input signal [fH 64.5kHz] [fV 105.0Hz]	
			B7	5	Adjusting mode INTP[3] Input signal [fH 82.5kHz] [fV 165.0Hz]	
			BE		Press [E] to return to the main menu.	
C	H DRIVE DUTY	○ Oscilloscope	C1		Set the cell to the menu at left and press [⏎].	
		▼ TP2 - GND ☐ Crosshatch	C2		Set the cell to the adjusting mode INTP[0] and press [⏎]	
			C3	-1	Check to be sure that the input signal to the monitor set is at given at left [fH 29.5kHz] and [fV 48.0Hz] and press [⏎]	
		Oscilloscope Range -1 10 µs/div -2 5 µs/div -4 5 µs/div -5 2 µs/div	C4		Set the cell to H DRIVE DUTY and press [⏎] Then move the cell to the data side.	
	3) Adjust VSR setting		C5		Make the adjustment to match the value shown at the right using [←] and [→] keys. Make registration using [⏎] after adjustment and press [E] to return to the menu of C2. <The same as C2, C3 C4, and C5 after setting the adjusting mode/signal and adjustment >	t1/t2 x 100 = 53% ±2.5%
			C6	-2	Adjusting mode INTP[1] Input signal [fH 39.0kHz] [fV 77.0Hz]	51% ±2.5%
			C7	-4	Adjusting mode INTP[2] Input signal [fH 64.5kHz] [fV 105.0Hz]	47%±2.5%
			C8	-5	Adjusting mode INTP[3] Input signal [fH 52.5kHz] [fV 165.0Hz]	45% ±2.5%
			CE		Press [E] to return to the main menu	

Note 1 Check to be sure that the program disc name is 2182PS before making necessary adjustment

Note 2 Unless otherwise specified, the monitor state is as given at right.

Note 3 The underlined places indicate the adjustment items on the screen of the PC

	Item Program Menu	◇ Test Meter ▼ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting value
D	H DRIVE+B 3) Adjust VSR setting	◇ Digital voltmeter ▼ TP1-GND	D1		Set the cell to the menu at left and press [↵].	
			D2		Set the cell to the adjusting mode INTP[0] and press [↵]	
			D3	1	Check that the input signal to the monitor is [fH 29.5kHz] and [fV 48.0Hz] and press [↵].	
			D4		Set the cell to H DRIVE +B and press [↵]. Then, move the cell to the data side.	
			D5		Make the adjustment to match the value shown at the right using [←] and [→] keys. Register with [↵] after adjustment and return to the menu of D2 using [E]. <The same as D2, D3, D4, and D5 except for the adjusting mode/signal/Adjusting value.>	20V ±0.15V
			D6	-2	Adjusting mode INTP[1]: Input signal [fH 39.0kHz] [fV 77.1Hz]	18V ±0.15V
			D7	-4	Adjusting mode INTP[2]: Input signal [fH 64.5kHz] [fV 105.0Hz]	15V ±0.15V
			D8	-5	Adjusting mode INTP[3]: Input signal [fH 82.5kHz] [fV 165.0Hz]	12V ±0.15V
			DE		Press [E] to return to the main menu.	
E	EHT ADJUST 4) Adjust OTHER setting	◇ High voltage probe and digital voltmeter ☐ RGB OFF (Sync signal only)	E1	MODE-2	Turn the power switch of the monitor OFF.	
			E2		Connect high voltage probe to anode cap and GND, then	
					Turn the power switch of the monitor ON.	
			E3		Set the cell to the menu at left and press [↵].	
			E4		Check to be sure that the input signal is as shown at left.	27KV ±0.3KV
			E5		Move the cell to EHT and press [↵].	
			E6		Make adjustment to as shown at right using [←] and [→].	
			EE		Register with [↵] after adjustment and return to the main menu using [E].	
F	DAF 8) Special ADJUST	◇ Oscilloscope ◇ 100:1 probe ◇ 10:1 probe ▼ TP301-GND(100:1) ▼ NTB [illegible] IG IN -GND ☐ White flat field pattern Oscilloscope Range H-DAF 2 µs/div V-DAF 5 µs/div	F1		Set the cell to the menu at left and press [↵].	Waveform of F4 (H DAF)
			F2		Select the 2 DAF ADJUST using [↵].	
			F3	-5	Check to be sure that the signal is as shown at left.	
			F4		Adjust the time axis of the oscilloscope so that the DAF waveform becomes as shown at right.	
			F5		Move the cell to H. DAF GAIN, H. DAF POS. and adjust as shown at right using [←] and [→]. (444Vp-p ±10V)	
			F6		Adjust the time axis of the oscilloscope so that the DAF waveform becomes as shown at right.	Waveform of F6 (V DAF)
			F7		Move the cell to the V. DAF GAIN, V DAF POS. and adjust as shown at right using [←] and [→]. (180Vp-p ±10V)	
			FE		Return to the menu of F2 using [E] and return to the main menu using [E] and [↵].	
G	FOCUS	☐ Crosshatch	G1	MODE-2	Turn the D FOCUS VR of the FBT to make the focus of the corner section optimum.	
			G2		Turn the S FOCUS VR of the FBT to make the focus of the center section optimum. (Repeat G1 and G2 to make it optimum.)	
		☐ Character pattern	G3		Switch to the character pattern and check to be sure that the focus is at its best. (Note: This adjustment should be done by turning the VR using a screwdriver.)	

	Item Program Menu	◇ Test Meter ▼ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
	H. CENTER		H1		Set the cell to the menu at left and press ↵	
		☐ RGB OFF (Sync signal only)	H2		Then set the Brightness to the max. Set the cell to the adjusting mode INTP[0] and press ↵	
			H3	1	Check to be sure that the input signal to the monitor set is as shown at left [fH 29.5kHz] and [fV 46.0Hz] and press ↵	
	3) Adjust VSR setting		H4		Set the cell to the H. CENTER and press ↵, and move the cell to the data side.	Set the RASTER to the center with respect to the bezel
H			H5		Make adjustment as shown at right using ← and → Register using ↵ after adjustment, press E, and return to the menu of H2 <The same as H2, H3, H4, and H5 except for the adjusting mode and signal.>	
			H6	2	Adjusting mode INTP[1] Input signal [fH 39.0kHz] [fV 77.1Hz]	
			H7	4	Adjusting mode INTP[2] Input signal [fH 64.5kHz] [fV 105.0Hz]	
			H8	5	Adjusting mode INTP[3] Input signal [fH 82.5kHz] [fV 165.0Hz]	
			HE		Return to the main menu by pressing E.	
	HV. SIZE/HV. POSI/ V. PCC (1)		I1		Set the cell to the menu at left and press ↵.	
	5) Adjust Factory preset	☐ Crosshatch	I2	MODE-2	Check to be sure that the input signal is as shown at left and press ↵. <Set the cell to the following items, press ↵ and make I3 and I4.>	
			I3		Adjust the H. SIZE, V. SIZE, H. POSI and V. POSI to the left using ← and →	H. SIZE 380mm ±5mm V. SIZE 285mm ±5mm HV. POSI CENTER
			I4		Set the V. PCC, V. PCC TRAPEZOID and V. PCC PARALLEL to the best using ← and →	
			IE		Press E and N to return to the main menu.	
	V. PCC	☐ Crosshatch	J1	MODE-2	Check to be sure that the input signal is as shown at left. Set the cell to the menu at left and press ↵. <Set the cell to the following items, press ↵ and make necessary adjustment.>	
J	3) Adjust OTHER setting		J2		Set the V. PCC CORNER, V. PCC CENTER and V. PCC BALANCE to the best using ← and →	
			JE		Press E to return to the main menu.	
	V. LIN (C)		K1		Set the cell to the menu at left and press the	
		Crosshatch	K2		Select the 4. V.LIN(C) from the menu	
			K3	MODE-2	Check to be sure that the input signal is as show at left	
K	8) Special ADJUST		K4		Adjust the V. LIN to the best using ← and →	
			KE		Return to the menu of K2 using ↵ and return to the main menu using E	

	Item Program Menu	○ Test Meter ▼ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
	HV SIZE, HV POSI, V. PCC (2)		L1		Set the cell to the menu at left and press [↵]	
			L2		Set the cell to the adjusting mode INTP[0] and press [↵]	
		☐ Crosshatch	L3	-1	Check to be sure that the input signal to the monitor set is as shown at left [fH 29.5kHz] and [fV 45.0Hz] and press [↵]	
			L4		Set the cell to the following items, press [↵], and make necessary adjustment using the [←] and [→] ① H. SIZE, ② V. SIZE, ③ H. POSI, ④ V. POSI, and ⑤ V. PCC	H. SIZE 380mm ±5mm V. SIZE 285mm ±5mm HV. POSI CENTER V. PCC best point
L	3) Adjust VSP setting		L5		After adjusting ① - ⑤, press [E] and return to the menu of L2. <Same as L2, L3, L4, and L5 except for the adjusting mode/signal.>	
			L6	-2	Adjusting mode INTP[1]: Input signal [fH 39.0kHz] [fV 77.1Hz]	
			L7	-4	Adjusting mode INTP[2] Input signal [fH 64.5kHz] [fV 105.0Hz]	
			L8	-5	Adjusting mode INTP[3]: Input signal [fH 82.5kHz] [fV 165.0Hz]	
			LE		Press [E] to return to the main menu	
	HV. SIZE, HV. POSI, V. PCC (3)		M1		Set the cell to the menu at left and press [↵]	
		☐ Crosshatch	M2	MODE-1	Check to be sure that the input signal to the monitor set is as shown at left [fH 31.5kHz] and [fV 60Hz] and press [↵].	
			M3		Set the cell to the following items, press [↵], and make adjustment as shown at right using [←] and [→] ① H SIZE, ② V. SIZE, ③ H. POSI, ④ V. POSI, ⑤ V. PCC, ⑥ PARALLEL and ⑦ TRAPEZOID **Note:** H. POSI and V. SIZE should use both modes, MSB and LSB	MODE 1, 2 H. SIZE 380mm ±5mm V. SIZE 285mm ±5mm HV. POSI CENTER V. PCC best point
	5) Adjust Factory preset		M4		After adjusting ① - ⑦, go to M5 using [E] and [Y] <Same as M2, M3, and M4 except for the input signal below.>	
			M5	MODE-2	Input signal [fH 60.0kHz] [fV 75.0Hz]	MODE 3 H. SIZE 355mm ±5mm V. SIZE 264mm ±5mm
			M6		After adjustment, go to M7 using [E] and [Y]	
			M7	MODE-3	Input signal [fH 79.9kHz] [fV 75.0Hz]	
M			ME		Return to the main menu after adjustment using [E] and [N]	

	Item Program Menu	◇ Test Meter ▼ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
N	BRIGHTNESS, COLOR		N1		Set the CONTRAST…MAX, BRIGHTNESS…CENTER and COLOR…9300K using the OSD	
	4) Adjust OTHER setting		N2		Set the cell to the menu at left and press ↵	
		☐ Sync signal only (RGB OFF)	N3	MODE-2	Feed the signal at left/pattern to the monitor.	
			N4		Set the cell to the R. LOW LIGHT 9300K then press ↵ and move the cell to data side	
			N5		Set the data value to "35" using ← and →.	
			N6		Do the same as N4 and M5 for G. LOW LIGHT 9300K.	
			N7		Do the same as N4 and M5 for B. LOW LIGHT 9300K.	
			N8		Move the cell to G2 9300K then press ↵, set the data value to "65".	
			N9		Press → until raster appear with any one of three colors.	
			N10		Move to LOW LIGHT 9300K of above color then set the value to "FF".	
			N11		Do the same for N9, N10 for another colors	
			N12		Move the cell to G2 9300K of the rest of three colors and adjust until raster appear slightly.	
			N13		Adjust LOW LIGHT 9300K of above two colors (N9∼N11) to the same as the N12	
			N14		Adjust G2 9300K to the point where raster disappear	
		☐ 16 gradation grayscale	N15		Switch over to the pattern at left and check to be sure that the 2nd gradation vaguely glitters.	
		☐ White window pattern (60 x 60mm)	N16		Switch over to the pattern at left and bring the sensor of the analyzer to the center of the screen image and set the CONTRAST…MAX.	
		◇ TV COLOR ANALYZER II	N17		Move the cell to the following items and make adjustment as shown at right using ← and → R. SUBCONT 9300K, G. SUBCONT 9300K and B. SUBCONT 9300K	Y=120 cd/m^2 ±5 x=0.281 ±0.020 y=0.311 ±0.020
			N18		Make adjustment to as shown at right using CONTRAST (Program menu on the PC)	Y=3 cd/m^2 x=0.281 ±0.020 y=0.311 ±0.020
			N19		Move the cell to the following item. Then make adjust as shown at right. R. LOW LIGHT 9300K, G. LOW LIGHT 9300K and B. LOW LIGHT 9300K	
			N20		Change the following data value to the same as 9300K using ← and →. G2 6550K, R. SUBCONT 6550K, G. SUBCONT 6550K and B. SUBCONT 6550K R. LOW LIGHT 6550K, G. LOW LIGHT 6550K and B. LOW LIGHT 6550K	
			N21		Press E to return to the main menu	
	8) Special ADJUST		N22		Set the cell (Special ADJUST) to the menu at left and press ↵.	
			N23		Select 3. Color ADJUST from the menu	
			N24		Automatically convert for the 6550K data when press ↵	
			NE		Press ↵ to return to M22 menu then press E to return to main menu.	
O	ABL	☐ WHITE FLAT FIELD PATTERN	O1		Set the CONTRAST…MAX, BRIGHTNESS…MAX, COLOR…9300K using the OSD of the monitor	
		◇ TV COLOR ANALYZER I	O2		Set the cell to the menu at left and press ↵	
	4) Adjust OTHER setting		O3	MODE-2	Feed the signal at left and bring the sensor of the analyzer to the screen image center	
			O4		Move the cell to ABL 9300K and adjust as shown at right	Y=100 cd/m^2 ±10
			O5		Change the ABL 6550K data values the same as ABL 9300K using ← and →	
			OE		Press E to return to the main menu	

	Item Program Menu	◇ Test Meter ▼ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
P	INPUT 1.0V SETTING	☐ White flat field pattern	P1	MODE-2	Set the cell to the menu at left and press [↵].	
			P2		Select 1: VIDEO 1.0V ADJUST from the menu.	
	8) Special ADJUST		P3		Set the CONTRAST MAX and VIDEO INPUT 1.0V using the OSD of the monitor set.	
			P4		Press [↵] against the message of "hit return key".	
			P5		Press [↵] as other message is displayed.	
			PE		Press [E] to return to the menu of P2 and return to the main menu using the [E].	
Q	H. SIZE LIMITER		Q1	MODE-2	Set the cell to the menu item at the left and press [↵].	
	8) Special ADJUST		Q2		Check to be sure that the input signal is as show at left.	
			Q3		Select the 5: H. SIZE LIMITER from the menu.	
			Q4		Automatically set with selected this menu.	
			QE		Return to the menu of Q3 using [↵] and return to the main menu using [E].	
R	FINAL SETTING		R1	MODE-2	Set the cell to the menu at left and press [↵].	
	8) Special ADJUST		R2		Select the 9: FINAL TUNE from the menu.	
			R3		Press either Y or N when the message of "CANCEL USER PRESET DATA (y/n) ->" has been output after a while.	
			RE		Press [↵] to return to the menu of R2 and then return to the main menu using [E].	
S	DATA SAVING		S1		Set the cell to the menu at left and press [↵].	
	7) Save data to FILE		S2		Key in the file name after ( ). Use SERIAL No. as a file name. (EXAMPLE FF4111732 = "4111732.DAT")	

2. Purity adjustment

The CRT is an ITC assembly, however, here is the explanation for readjustment just in case.

If color shading is apparent, make the following adjustment.

2.1.

(1) Verify that no unusual magnetic fields are near the Display unit (magnetic screwdrivers, table magnets, etc.). If possible, use a wooden workbench for this procedure.

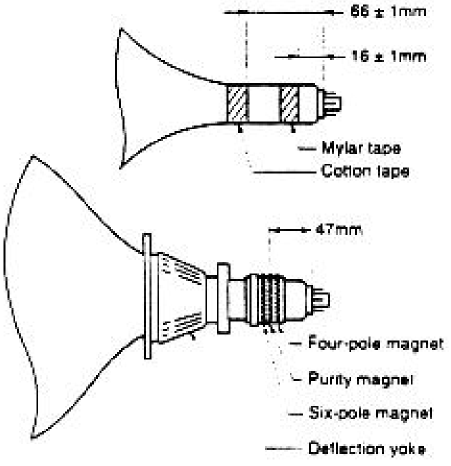
(2) Degauss the magnetism of chassis and CRT with external degaussing coil.

(3) Adjust the purity magnet until each of the red, green and blue channels is free of color shading.

Make the following adjustment if color shading cannot be corrected by the above, or if the CRT or deflection yoke has been replaced.

2.2.

(1) Keep the convergence yoke and deflection yoke in the positions shown below.



CY tightening torque: 8 [illegible] kgf·cm
DY tightening torque: 18 ± 2 kgf·cm

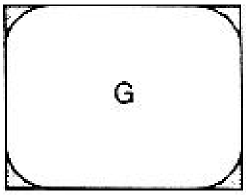
(2) Make sure that this adjustment is done later than 30 minutes after power on.

(3) Degauss the magnetism of chassis and CRT with an external degaussing coil.

(4) Verify that static convergence is roughly matched. If it is misaligned, adjust static convergence of Red color and Blue color with Four-pole magnet.

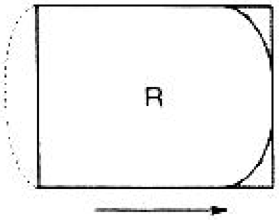
(5) Remove the wedge from the deflection yoke, and pull the deflection yoke fully to the front.

(6) Display green color solely with the signal generator. Adjust the purity magnet so that the center of the screen displays a pure green disk. Slide the deflection yoke rearward until the four corners shaded and check its area's uniformity.



(7) After the adjustment of step 5, readjust the static convergence if some gap was found. Static convergence alignment for this step is to be performed with Four-pole magnet and Six-pole magnet.

(8) Display red disk. Adjust the purity magnets so as that red disk is as the center of the screen simultaneously. If red is shifted, move its position in the opposite direction.



(9) Display Green again. Slide the deflection yoke rearward until the screen appears green on the whole, and fasten it there.

(10) Confirm purity in each direction by rotating the set to direction of East, West, South, and North after degauss by external degaussing coil.

(11) If magnetism remains even after the adjustment use the compensation magnet to obtain purity.

The final confirmation method for purity

In the natural magnetic field, rotate the monitor in the direction of East, West, South and North.

Earth's magnetic field may cause magnetism on the monitor. Confirm that the automatic degaussing circuit built in the monitor can erase the amount of magnetism which was introduced with above rotation.

3. Convergence adjustment

The CRT is an ITC assembly, however, here is the explanation for readjustment just in case.

(1) Make sure that this adjustment is done later than 30 minutes after power on. Check general ability coarse adjustment and purity adjustment finished.

(2) Degauss the magnetism of chassis and CRT with degaussing coil. (CRT board also)

(3) Apply mixed crosshatch signals of red and blue from the signal generator. Nudge the deflection yoke to equal its inclination up and down, right and left with a temporary wedge between CRT and the top of the yoke.

(4) Match the red and blue images at the center of the screen by rotating the Four-pole magnet (See STEP-1 in figure for examples).

(5) Apply mixed crosshatch signal of red, blue and green from the signal generator.

(6) Match the red, green and blue images at the center of the screen by rotating the Six-pole magnet. (See STEP-2 in figure for examples)

(7) Loosen the deflection yoke fastening screw and gently nudge the yoke up and down to achieve the best overall convergence on the edges of the screen (See STEP-3 in figure for examples).
Insert wedge at the top of the deflection yoke so that the convergence will not deviate due to an unsteady deflection yoke.

(8) Gently nudge the yoke from side to side to achieve the best overall convergence on the edges of the screen (See STEP-4 in figure for examples).
Insert wedges at the left side and right side of the deflection yoke so that the convergence will not deviate due to an unsteady deflection yoke. (Do not apply silicon adhesive to the wedges to prevent them from slipping out).

(9) Check that the image is horizontal.
If needed, rotate the deflection yoke.

(10) Recheck the purity adjustment. If purity was adversely affected repeat the purity adjustment, then recheck convergence when finished.

(11) Retighten the deflection yoke fastening screw. Do not overtighten the screw, as this can damage the CRT.

Tightening torque: 18 ± 2 kgf·cm

(12) Align the horizontal line convergence at the center of the screen with the Differential coil (See STEP-5in figure for examples).

(13) Align the horizontal line convergence at the bottom and of the screen with the Differential resistor VR4 (See STEP-6 in figure for examples).

(14) Align the horizontal line convergence at the top of the screen with the Differential resistor VR3 (See STEP-7 in figure for examples)

(15) Align the center vertical line convergence at the top of the screen with the Vertical Isotropic Astigmatism resistor VR1 (See STEP-8 in figure for examples).

(16) Align the center vertical line convergence at the bottom of the screen with the Vertical Isotropic Astigmatism resistor VR2 (See STEP-9 in figure for examples).

(17) Recheck convergence at the center of the screen. If needed, realign with the Four-pole magnet and the Six-pole magnet.

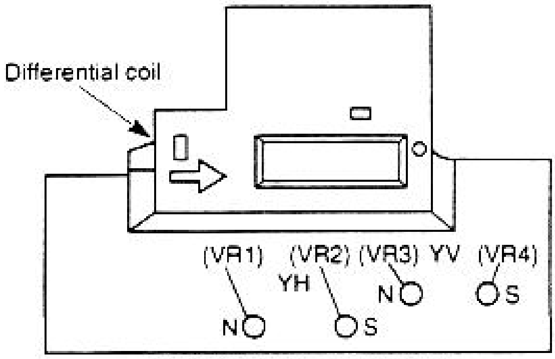
(18) Insert wedges as shown in STEP-10 of figure (at the top, bottom, and right side of the deflection yoke). Secure them with silicon adhesive and polyester tape. Remove any temporary wedges while keeping convergence aligned.

(19) If the convergence on the fringe areas in still not acceptable, place one or more Permalloys around the funnel to achieve the best effect. Then press these Permalloys onto the funnel. Verify convergence around all edges of the screen. (See SYTEP-11 in figure for examples).

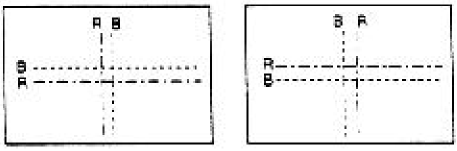
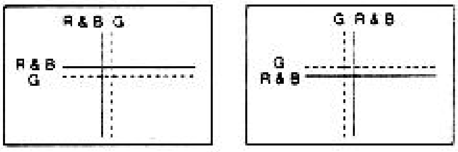
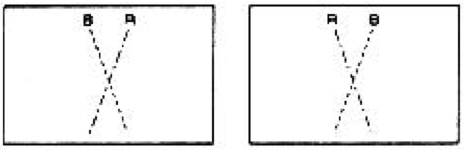
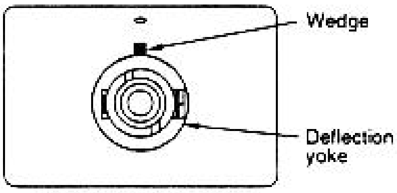
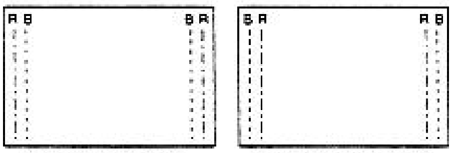
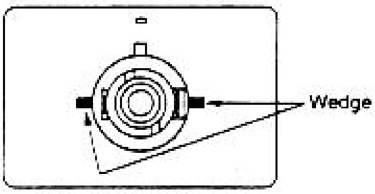
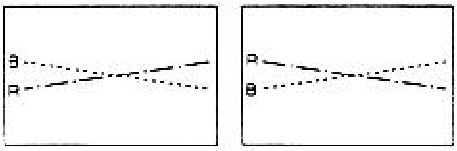
NOTE

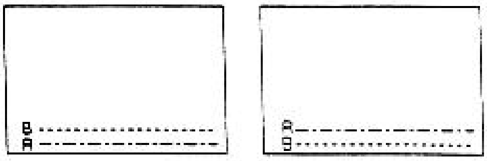
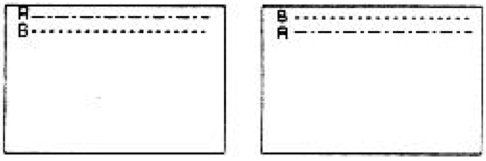
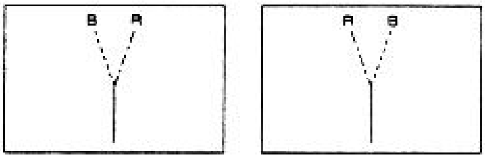
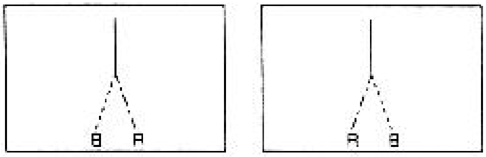
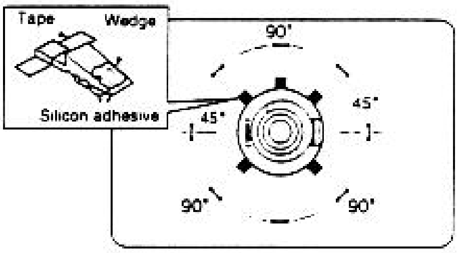
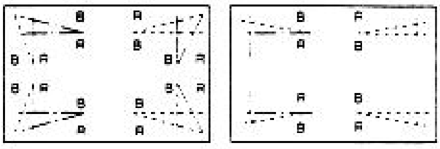
In the above step, do not place the Permalloys closer than 20 mm from the HV anode cap. Do not tape them over any paper labels or secure them with silicon adhesive.

(20) After completion of adjustment, apply locking paint to the movable portions of the deflection and convergence yokes to secure them.



Deflection yoke upper view

Adjustment part	Misconvergence pattern Wedge inserting position
Four-pole magnet B	**STEP-1** 
Six-pole magnet	**STEP-2**  R & B G R & B G G R & B G R & B
Deflection yoke	**STEP-3**  Tilting the yoke up Tilting the yoke down  Wedge Deflection yoke Rear view of the CRT
Deflection yoke	**STEP-4**  Tilting the yoke left Tilting the yoke right  Rear view of the CRT
Differential coil	**STEP-5** 

Adjustment part	Misconvergence pattern Wedge inserting position
Differential resistor (VR4) YV (S)	**STEP-6** 
Differential resistor (VR3) YV (N)	**STEP-7** 
Vertical Isotropic Astigmatism resistor (VR1) YH (N)	**STEP-8** 
Vertical Isotropic Astigmatism resistor (VR2) YH (S)	**STEP-9** 
	STEP-10  Tape Wedge Silicon adhesive 90° 45° 45° 90° 90° Wedge spacing and how to tape
Permalloy	**STEP-11**  B R R B B R B R B R B R B R B R B R R B R B B R

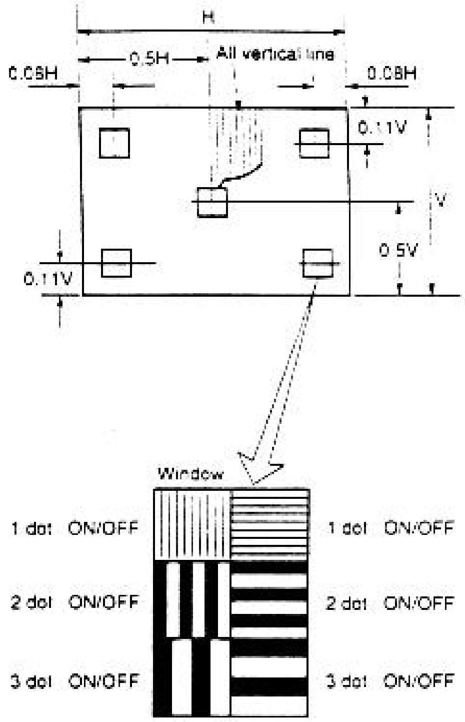
CHECK ITEM

These items are intended for a recheck after adjustment and for a check of the following function operations

1. Resolution check
2. Brightness variation check
3. Gradation check
4. Brightness check
5. Deflection linearity check
6. Distortion check
7. Image stability check
8. Blinking image check
9. Circuit operation check
10. Specific function check
11. Power save function check

1. Resolution Check

(1) Apply resolution check pattern.



(2) Check with the normal signal and inverted signal. Check to be sure that display color between dots is uniform and that there are no color difference and spotty display color.

(3) Check the entire image quality including resolution.

2. Brightness Variation Check

(1) Cause the white full dot pattern to be displayed with the Mode-2 signal.

(2) Set the contrast to a maximum.
Set the brightness to the center.

(3) Make sure that a brightness difference between the center and periphery is <65% with the horizontal magnetic field in the condition of ±30 μT

3. Gradation Check

(1) Cause the 16 grayscale to be displayed with the Mode-2 signal. (White gradation waves.)

(2) Set the contrast to a maximum and the brightness to the center.

(3) At this time, the 1st gradation (black level) cannot be seen and the 2nd gradation must be barely lit.

(4) With the brightness set to the center, vary the contrast from the maximum point and the gradation tracking must be good at that time.

Note: If tint (particularly the gray, which is a middle color) is different, make adjustment of the white balance once again.

(5) With the contrast set to a maximum, vary the brightness from the maximum point to the minimum point and check to be sure that the brightness of the low gradation portion changes.

Note: Check both the color select 9300K and 6550K.

4. Brightness Check

(1) Cause the white full-flat field pattern to be displayed with the Mode-2 signal.

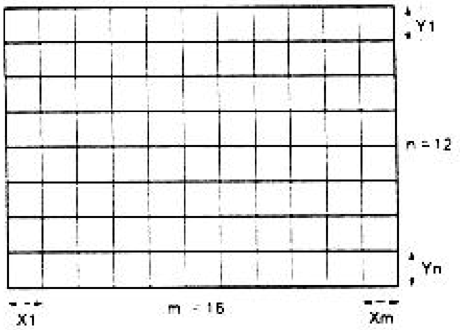
(2) Make sure that the brightness value is < 17 cd/m² when the contrast is set to a minimum and the brightness to the center.

5. Deflection Linearity Check

(1) Display the green only crosshatch pattern.

$$\text{Horizontal linearity} = \frac{\text{X max.} - \text{X min.}}{\text{X max.} + \text{Ymin.}} \times 100\%$$

$$\text{Vertical linearity} = \frac{\text{Ymax.} - \text{Ymin.}}{\text{Ymax.} + \text{Ymin}} \times 100\%$$



(2) To confirm the horizontal deflection linearity, proceed in the next input signal modes:

Mode-1 }
Mode-2 } 6%
Mode-3 }

To confirm the vertical deflection linearity, proceed in the following input signal modes:

6. Distortion Check

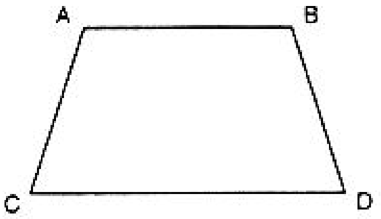
(1) Apply the signal of the following mode and supply the green crosshatch pattern.

Mode-1
Mode-2
Mode-3

(2) Make sure that each value comes within the value indicated above.

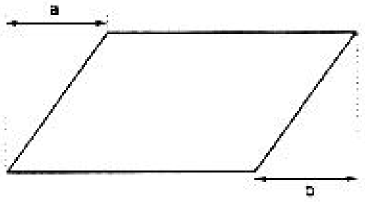
- Distortion
- Trapezoid

|AC - BD| ≤ 2.5mm
|AB - CD| ≤ 2.5mm



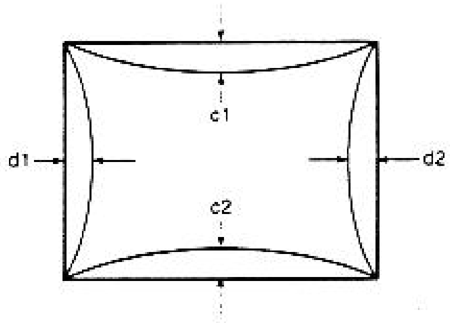
- Parallelogram

a, b ≤ 2mm



- Pincushion and barrel

|C1|, |C2| ≤ 2.5 mm
|d1|, |d2| ≤ 2.0 mm



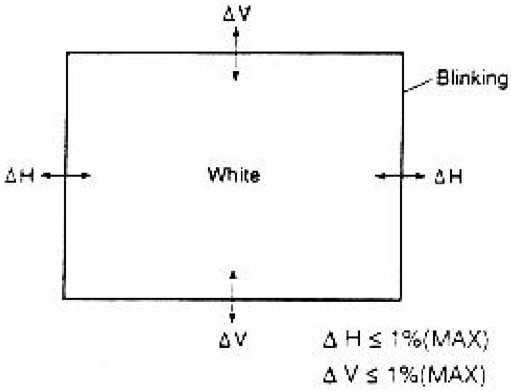
7. Image Stability Check

(1) Check to be sure that the size variations are < 2 mm for horizontal size and < 1.5 mm for vertical size when the white full dot pattern of Mode-1 is displayed and the AC voltage is changed to 90 – 264 V.

(2) Make sure that the size variations are < 2 mm for horizontal size and < 1.5 mm for vertical size when contrast is changed to a minimum from maximum at the AC voltage of 120 V/240V.

8. Blinking Image Check

(1) Apply blinking pattern signal. (100%)



(2) Check the image stability at Mode-1.
Check if image changes due to blinking meets the standards below using the microscope.

9. Circuit Operation Check

(1) Check the protection operation at fH not covered in the specifications.

(2) Apply fH = 28 KHz and 64KHz signal and check to be sure that sync flows.

10. Specific Function Check

(1) Create the crosshatch pattern using the Mode-2 signal of the preset timing.

(2) Vary the variations of the vertical size and the deviation of the horizontal size and check to be sure that the horizontal size and horizontal position variations meet the values given below.

Vertical size	→ Full scan
Vertical position	→ up and down 5 mm or more
Horizontal size	→ Full scan
Horizontal position	→ left 40 mm or more
Horizontal position	→ right 40 mm or more

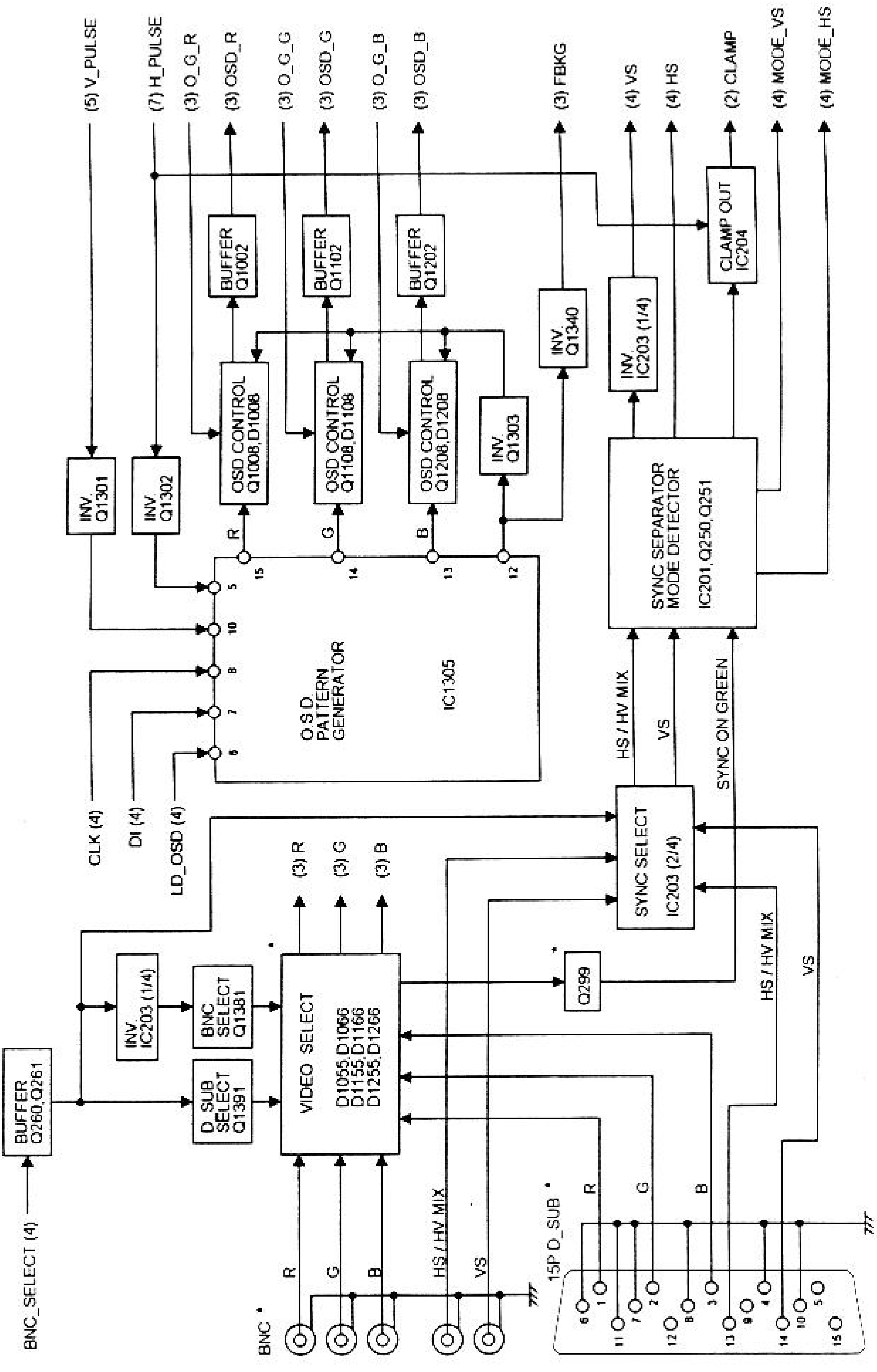
11. Power Save Function Check

The power consumption must meet the specifications when the horizontal/vertical sync signals are changed as shown below.

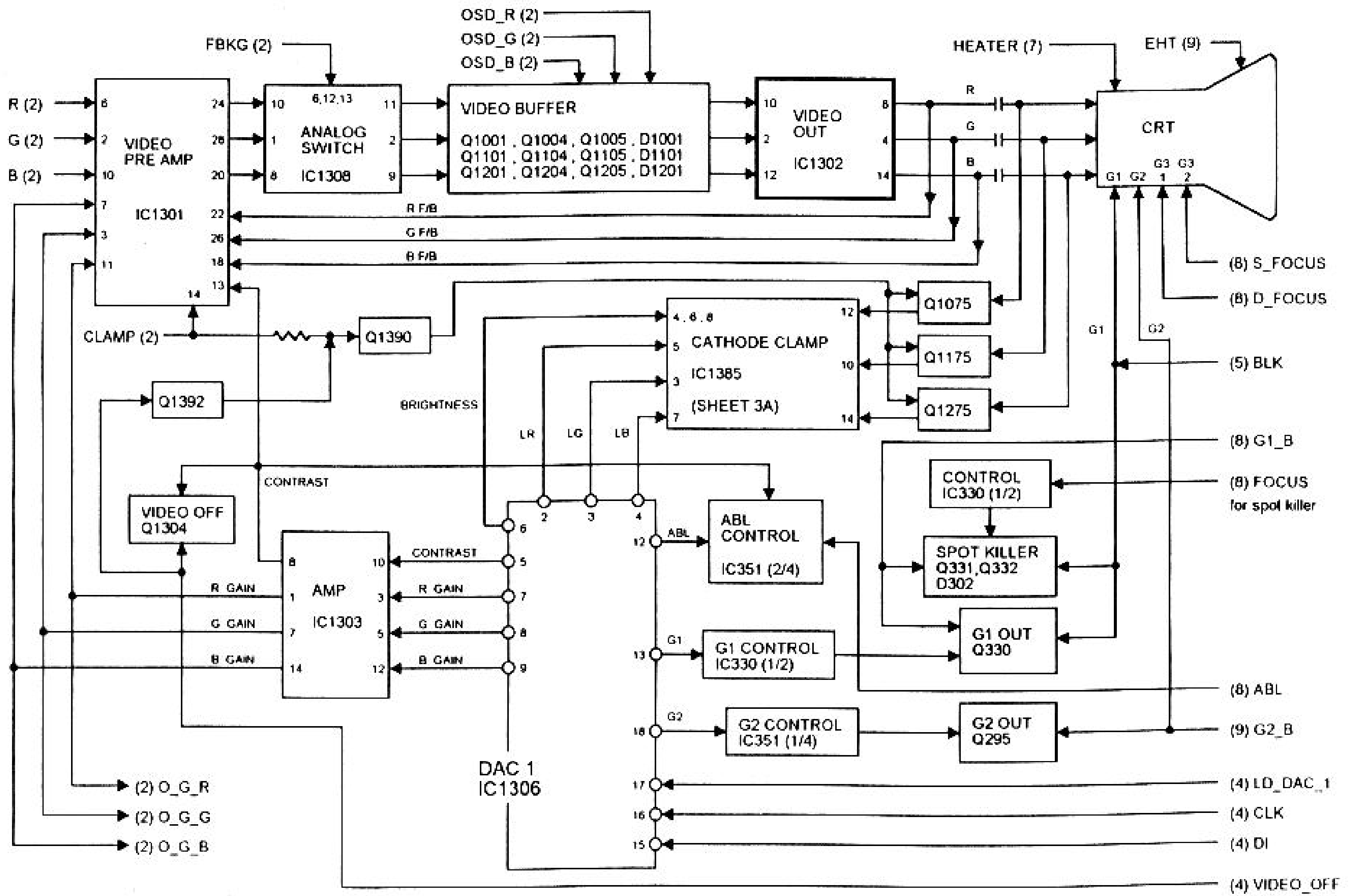
H. SYNC	OFF	ON	OFF
V. SYNC	ON	OFF	OFF
SPEC	< 30W	< 30W	< 8W

BLOCK DIAGRAM

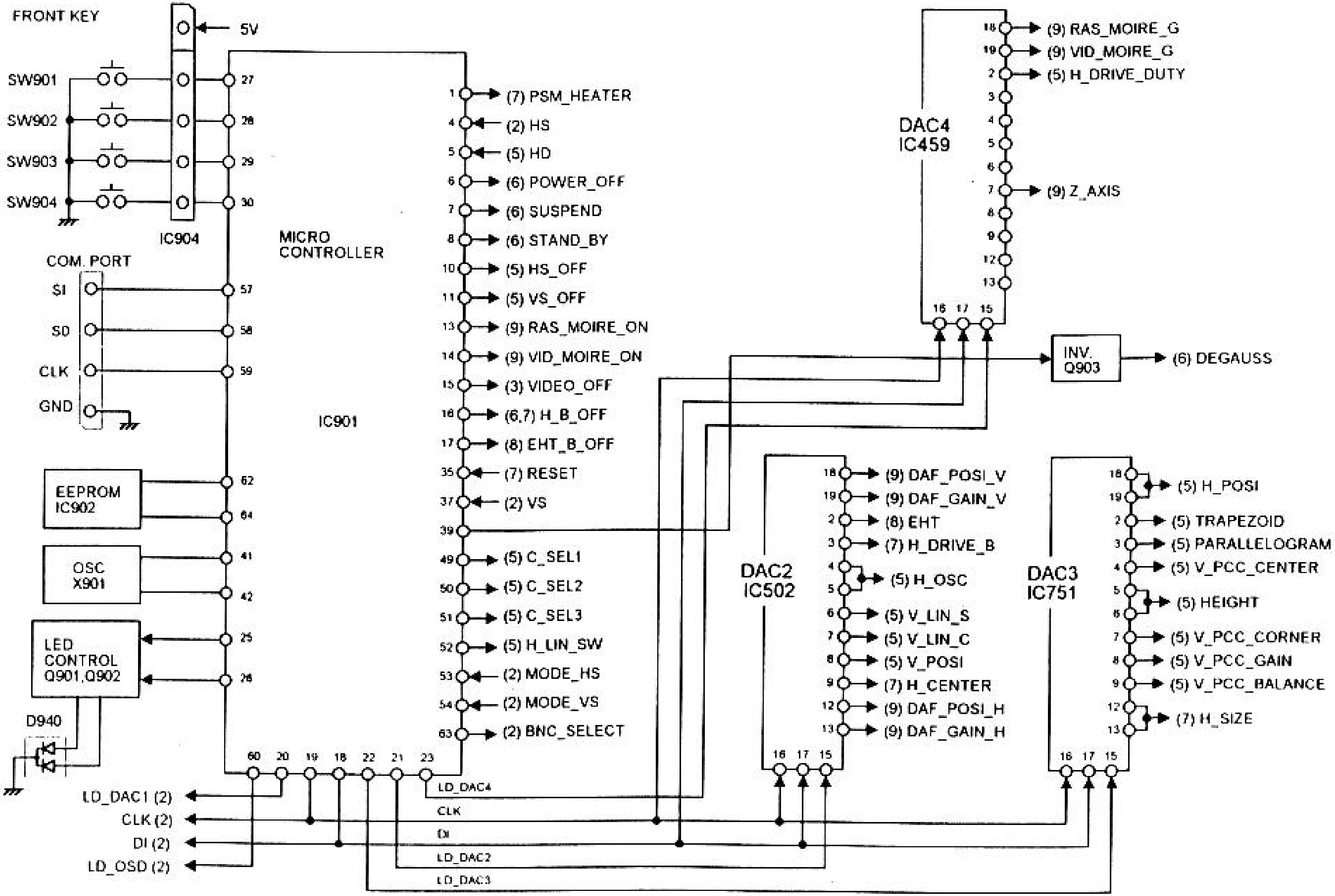
SHEET (1) SIGNAL SELECT * / SHEET (2) SYNC SEPARATE


(5) V_PULSE
(7) H_PULSE
(3) O_G_R
(3) OSD_R
(3) O_G_G
(3) OSD_G
(3) O_G_B
(3) OSD_B
(3) FBKG
(4) VS
(4) HS
(2) CLAMP
(4) MODE_VS
(4) MODE_HS
BUFFER Q1002
BUFFER Q1102
BUFFER Q1202
CLAMP OUT IC204
INV. Q1340
INV. IC203 (1/4)
OSD CONTROL Q1008, D1008
OSD CONTROL Q1108, D1108
OSD CONTROL Q1208, D1208
INV. Q1303
INV. Q1301
INV. Q1302
SYNC SEPARATOR MODE DETECTOR IC201, Q250, Q251
R
G
B
15
14
13
12
5
10
8
7
6
O.S.D. PATTERN GENERATOR
IC1305
CLK (4)
DI (4)
LD_OSD (4)
HS / HV MIX
VS
SYNC ON GREEN
SYNC SELECT IC203 (2/4)
(3) R
(3) G
(3) B
BUFFER Q260, Q261
BNC_SELECT (4)
INV. IC203 (1/4)
BNC SELECT Q1381
D_SUB SELECT Q1391
VIDEO SELECT D1055, D1066 D1155, D1166 D1255, D1266
*
Q299
*
HS / HV MIX
VS
BNC *
R
G
B
HS / HV MIX
VS
15P D_SUB *
R
G
B
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

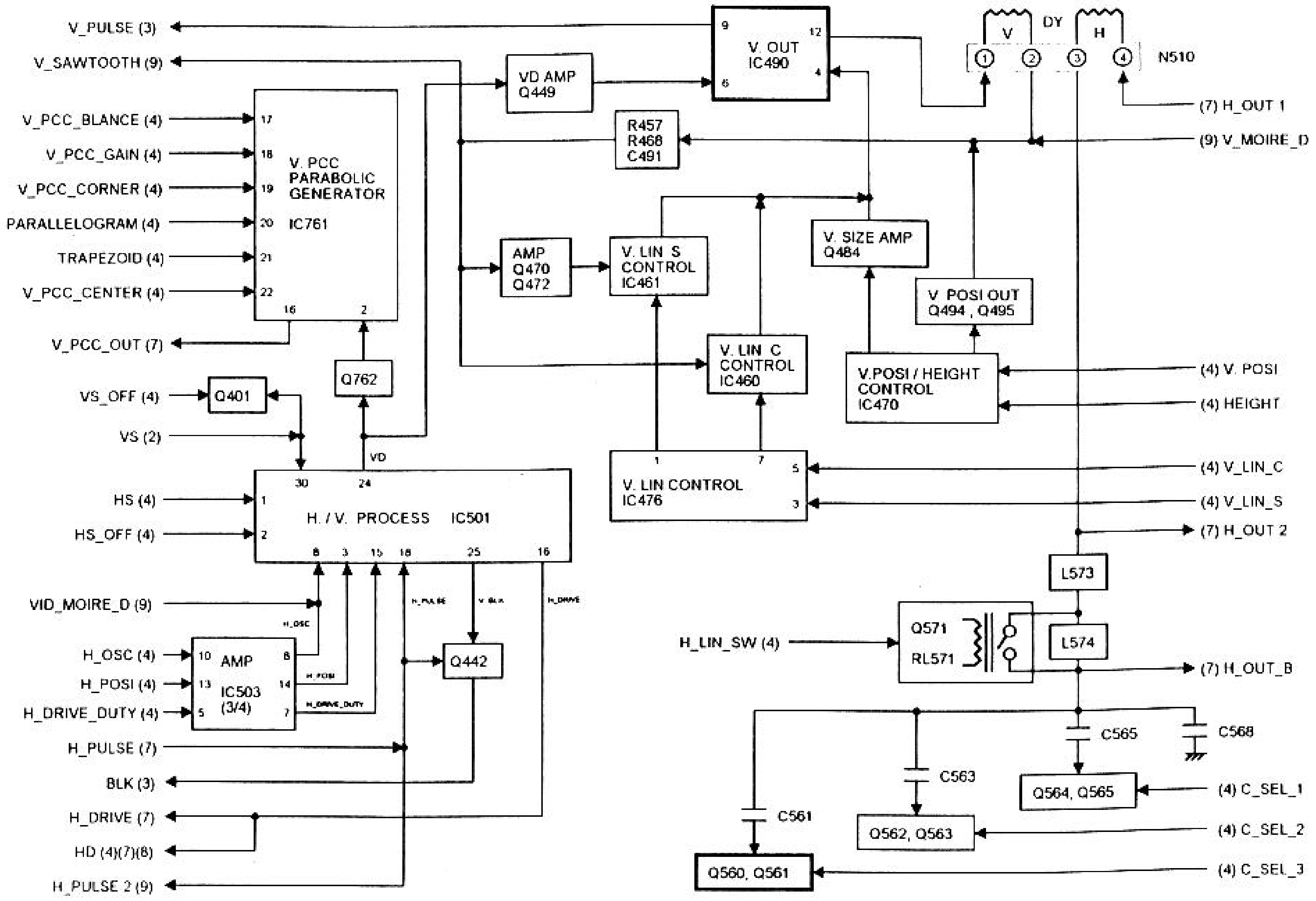
SHEET (3) VIDEO OUT / SHEET (3A) CATHODE CLAMP


OSD_R (2)
OSD_G (2)
OSD_B (2)
FBKG (2)
HEATER (7)
EHT (9)
R (2)
G (2)
B (2)
VIDEO PRE AMP
IC1301
6
2
10
7
3
11
24
28
20
22
26
18
13
14
ANALOG SWITCH
IC1308
10
1
8
6,12,13
11
2
9
VIDEO BUFFER
Q1001 , Q1004 , Q1005 , D1001
Q1101 , Q1104 , Q1105 , D1101
Q1201 , Q1204 , Q1205 , D1201
VIDEO OUT
IC1302
10
2
12
8
4
14
R
G
B
CRT
G1 G2 G3 1 G3 2
R F/B
G F/B
B F/B
(8) S_FOCUS
(8) D_FOCUS
CLAMP (2)
Q1390
Q1075
Q1175
Q1275
G1
G2
(5) BLK
CATHODE CLAMP
IC1385
(SHEET 3A)
4 , 6 , 8
5
3
7
12
10
14
Q1392
BRIGHTNESS
LR
LG
LB
(8) G1_B
CONTROL
IC330 (1/2)
(8) FOCUS
for spot killer
CONTRAST
VIDEO OFF
Q1304
ABL
ABL CONTROL
IC351 (2/4)
SPOT KILLER
Q331,Q332
D302
AMP
IC1303
8
1
7
14
10
3
5
12
CONTRAST
R GAIN
G GAIN
B GAIN
R GAIN
G GAIN
B GAIN
2
3
4
6
5
7
8
9
12
13
18
17
16
15
G1 OUT
Q330
G1
G1 CONTROL
IC330 (1/2)
(8) ABL
G2
G2 CONTROL
IC351 (1/4)
G2 OUT
Q295
(9) G2_B
DAC 1
IC1306
(2) O_G_R
(2) O_G_G
(2) O_G_B
(4) LD_DAC_1
(4) CLK
(4) DI
(4) VIDEO_OFF

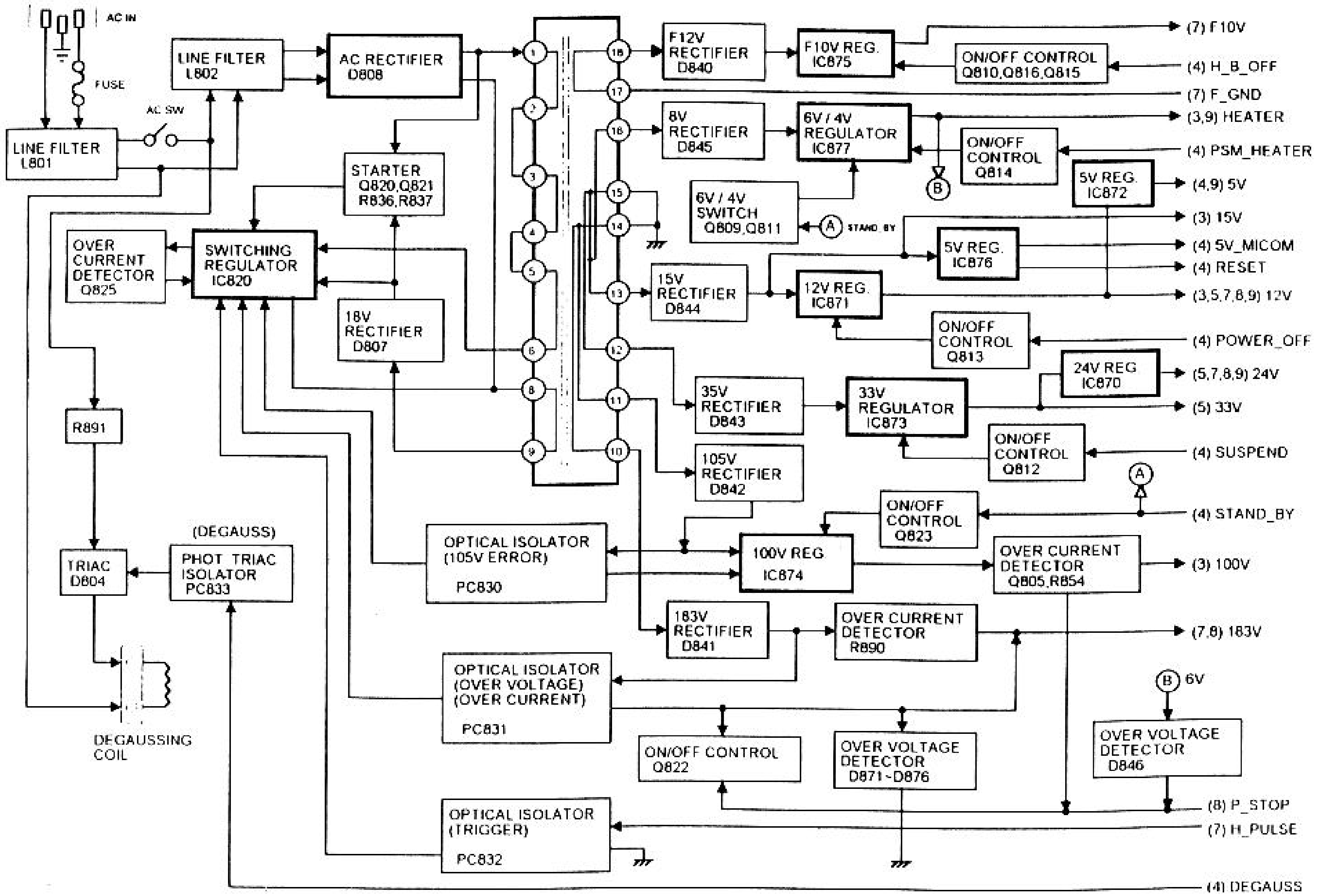
SHEET (4) MICRO CONTROLLER / DIGITAL ANALOG CONVERTER


FRONT KEY
SW901
SW902
SW903
SW904
5V
IC904
27
28
29
30
COM. PORT
SI
SO
CLK
GND
57
58
59
EEPROM
IC902
62
64
OSC
X901
41
42
LED
CONTROL
Q901,Q902
25
26
D940
MICRO
CONTROLLER
IC901
1 (7) PSM_HEATER
4 (2) HS
5 (5) HD
6 (6) POWER_OFF
7 (6) SUSPEND
8 (6) STAND_BY
10 (5) HS_OFF
11 (5) VS_OFF
13 (9) RAS_MOIRE_ON
14 (9) VID_MOIRE_ON
15 (3) VIDEO_OFF
16 (6,7) H_B_OFF
17 (8) EHT_B_OFF
35 (7) RESET
37 (2) VS
39
49 (5) C_SEL1
50 (5) C_SEL2
51 (5) C_SEL3
52 (5) H_LIN_SW
53 (2) MODE_HS
54 (2) MODE_VS
63 (2) BNC_SELECT
60
20
19
18
22
21
23
LD_DAC4
CLK
DI
LD_DAC2
LD_DAC3
LD_DAC1 (2)
CLK (2)
DI (2)
LD_OSD (2)
DAC4
IC459
18 (9) RAS_MOIRE_G
19 (9) VID_MOIRE_G
2 (5) H_DRIVE_DUTY
3
4
5
6
7 (9) Z_AXIS
8
9
12
13
16 17 15
INV.
Q903
(6) DEGAUSS
DAC2
IC502
18 (9) DAF_POSI_V
19 (9) DAF_GAIN_V
2 (8) EHT
3 (7) H_DRIVE_B
4
5 (5) H_OSC
6 (5) V_LIN_S
7 (5) V_LIN_C
8 (5) V_POSI
9 (7) H_CENTER
12 (9) DAF_POSI_H
13 (9) DAF_GAIN_H
16 17 15
DAC3
IC751
18
19 (5) H_POSI
2 (5) TRAPEZOID
3 (5) PARALLELOGRAM
4 (5) V_PCC_CENTER
5
6 (5) HEIGHT
7 (5) V_PCC_CORNER
8 (5) V_PCC_GAIN
9 (5) V_PCC_BALANCE
12
13 (7) H_SIZE
16 17 15

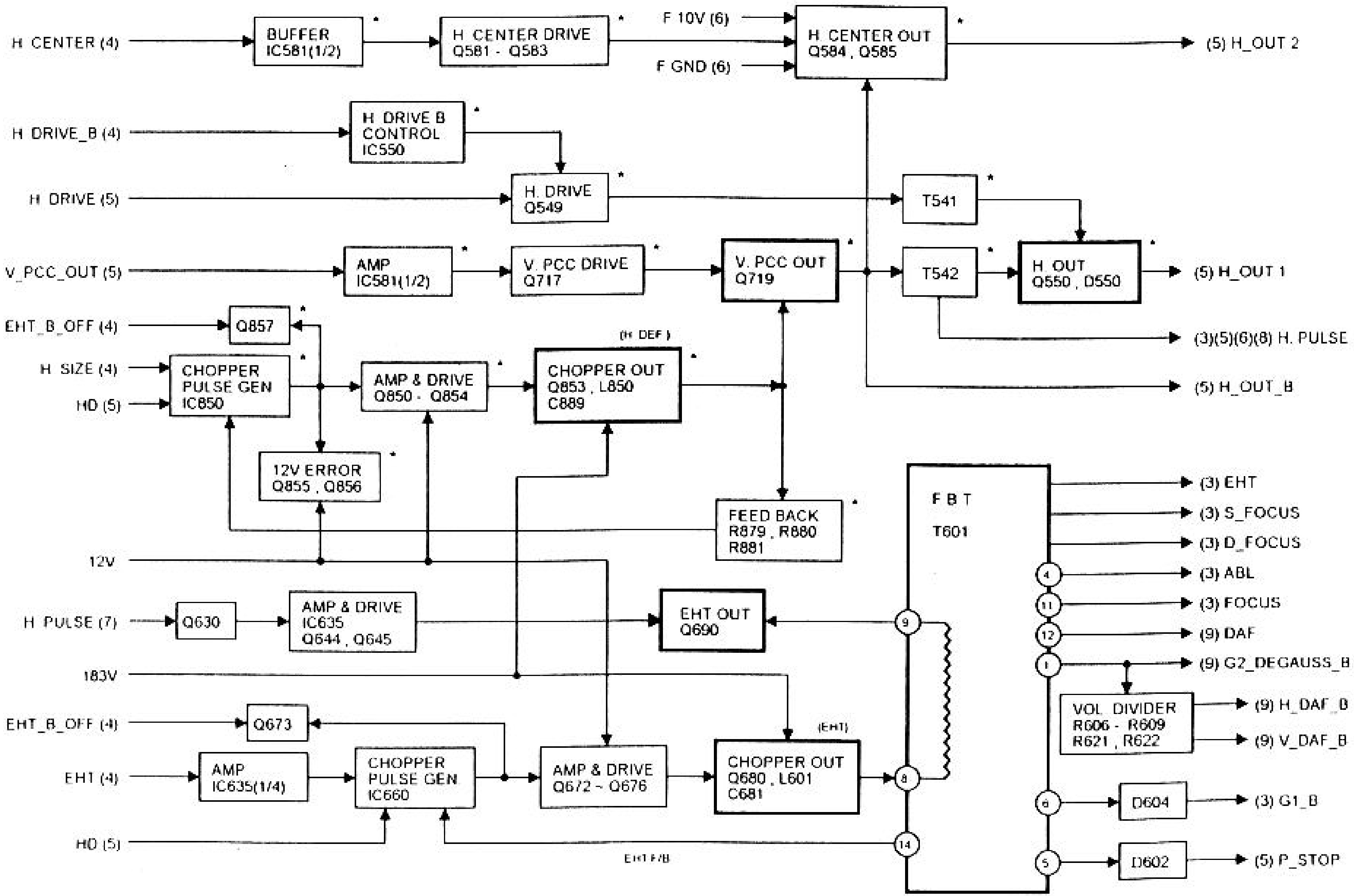
SHEET (5) V. OSC - OUT / V. PCC CONTROL / H. OSC / H. LIN CONTROL


V_PULSE (3)
V_SAWTOOTH (9)
V_PCC_BLANCE (4)
V_PCC_GAIN (4)
V_PCC_CORNER (4)
PARALLELOGRAM (4)
TRAPEZOID (4)
V_PCC_CENTER (4)
V_PCC_OUT (7)
VS_OFF (4)
VS (2)
HS (4)
HS_OFF (4)
VID_MOIRE_D (9)
H_OSC (4)
H_POSI (4)
H_DRIVE_DUTY (4)
H_PULSE (7)
BLK (3)
H_DRIVE (7)
HD (4)(7)(8)
H_PULSE 2 (9)
V. PCC PARABOLIC GENERATOR IC761
17
18
19
20
21
22
16
2
Q762
Q401
VD
H. / V. PROCESS IC501
30
24
1
2
8
3
15
18
25
16
H_OSC
H_POSI
H_DRIVE_DUTY
H_PULSE
V_BLK
H_DRIVE
AMP IC503 (3/4)
10
13
5
8
14
7
Q442
VD AMP Q449
V. OUT IC490
9
12
6
4
R457 R468 C491
AMP Q470 Q472
V. LIN S CONTROL IC461
V. LIN C CONTROL IC460
V. LIN CONTROL IC476
1
7
5
3
V. SIZE AMP Q484
V. POSI OUT Q494 , Q495
V.POSI / HEIGHT CONTROL IC470
DY
V
H
①
②
③
④
N510
(7) H_OUT 1
(9) V_MOIRE_D
(4) V. POSI
(4) HEIGHT
(4) V_LIN_C
(4) V_LIN_S
(7) H_OUT 2
L573
Q571 RL571
L574
H_LIN_SW (4)
(7) H_OUT_B
C565
C568
C563
C561
Q564, Q565
Q562, Q563
Q560, Q561
(4) C_SEL_1
(4) C_SEL_2
(4) C_SEL_3

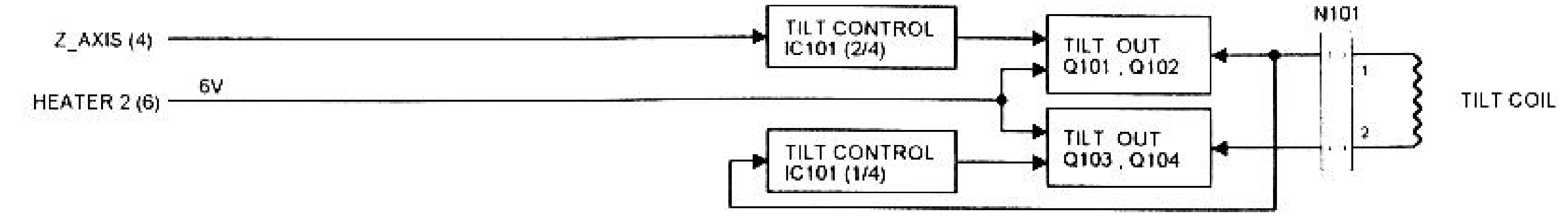
SHEET (6) POWER SUPPLY

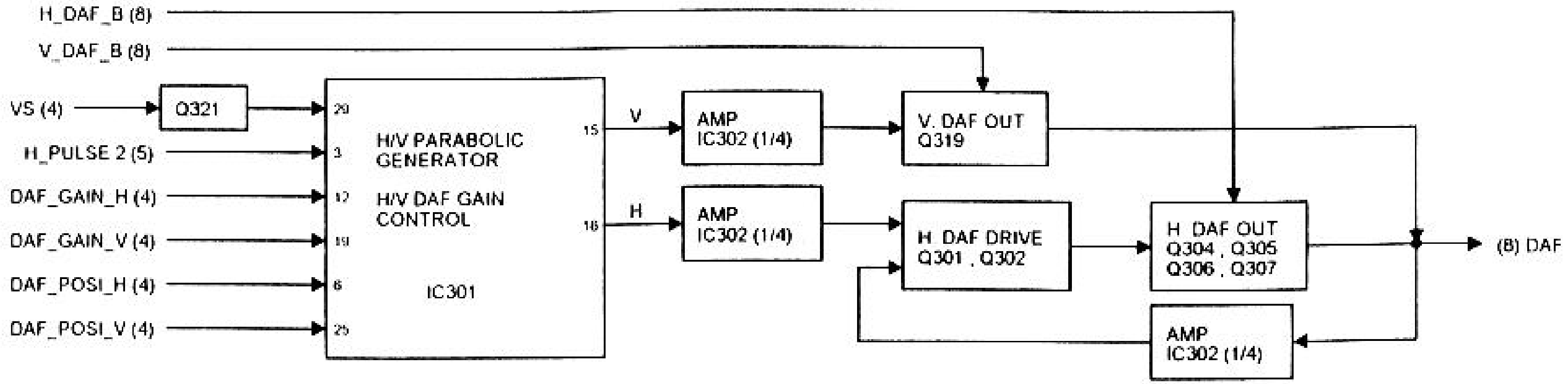

AC IN
FUSE
AC SW
LINE FILTER L801
LINE FILTER L802
AC RECTIFIER D808
STARTER Q820,Q821 R836,R837
SWITCHING REGULATOR IC820
OVER CURRENT DETECTOR Q825
18V RECTIFIER D807
R891
TRIAC D804
(DEGAUSS) PHOT TRIAC ISOLATOR PC833
DEGAUSSING COIL
1
2
3
4
5
6
8
9
18
17
16
15
14
13
12
11
10
F12V RECTIFIER D840
F10V REG. IC875
ON/OFF CONTROL Q810,Q816,Q815
8V RECTIFIER D845
6V / 4V REGULATOR IC877
ON/OFF CONTROL Q814
6V / 4V SWITCH Q809,Q811
A
STAND_BY
B
5V REG. IC872
5V REG. IC876
15V RECTIFIER D844
12V REG. IC871
ON/OFF CONTROL Q813
24V REG IC870
35V RECTIFIER D843
33V REGULATOR IC873
ON/OFF CONTROL Q812
105V RECTIFIER D842
ON/OFF CONTROL Q823
OPTICAL ISOLATOR (105V ERROR) PC830
100V REG IC874
OVER CURRENT DETECTOR Q805,R854
183V RECTIFIER D841
OVER CURRENT DETECTOR R890
OPTICAL ISOLATOR (OVER VOLTAGE) (OVER CURRENT) PC831
ON/OFF CONTROL Q822
OVER VOLTAGE DETECTOR D871~D876
6V
OVER VOLTAGE DETECTOR D846
OPTICAL ISOLATOR (TRIGGER) PC832
(7) F10V
(4) H_B_OFF
(7) F_GND
(3,9) HEATER
(4) PSM_HEATER
(4,9) 5V
(3) 15V
(4) 5V_MICOM
(4) RESET
(3,5,7,8,9) 12V
(4) POWER_OFF
(5,7,8,9) 24V
(5) 33V
(4) SUSPEND
(4) STAND_BY
(3) 100V
(7,8) 183V
(8) P_STOP
(7) H_PULSE
(4) DEGAUSS

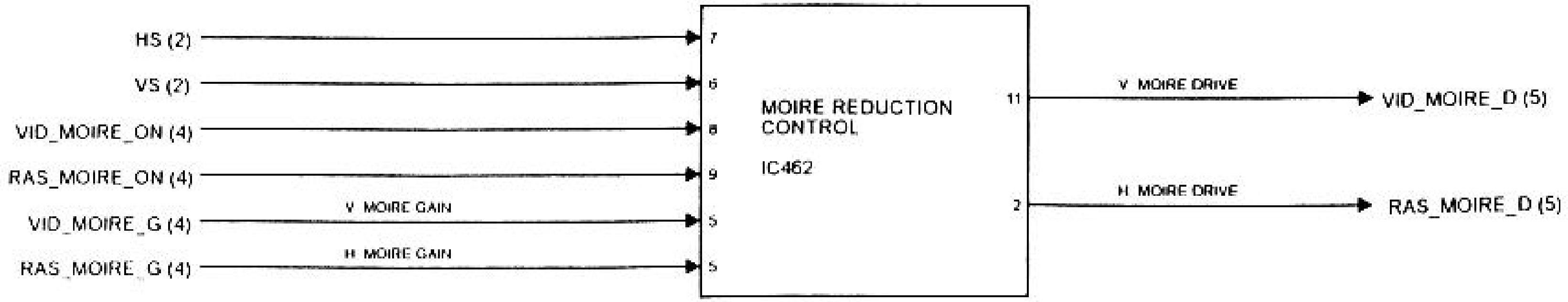
SHEET (7) HORIZONTAL DEFLECTION * / SHEET (8) EHT OUT


H CENTER (4)
BUFFER IC581(1/2)
H CENTER DRIVE Q581 - Q583
F 10V (6)
F GND (6)
H CENTER OUT Q584 , Q585
(5) H_OUT 2
H DRIVE_B (4)
H DRIVE B CONTROL IC550
H DRIVE (5)
H. DRIVE Q549
T541
V_PCC_OUT (5)
AMP IC581(1/2)
V. PCC DRIVE Q717
V. PCC OUT Q719
T542
H. OUT Q550 , D550
(5) H_OUT 1
(3)(5)(6)(8) H. PULSE
(5) H_OUT_B
EHT_B_OFF (4)
Q857
H SIZE (4)
HD (5)
CHOPPER PULSE GEN IC850
AMP & DRIVE Q850 - Q854
(H DEF)
CHOPPER OUT Q853 , L850 C889
12V ERROR Q855 , Q856
FEED BACK R879 , R880 R881
12V
H PULSE (7)
Q630
AMP & DRIVE IC635 Q644 , Q645
EHT OUT Q690
183V
EHT_B_OFF (4)
Q673
EHT (4)
AMP IC635(1/4)
CHOPPER PULSE GEN IC660
AMP & DRIVE Q672 ~ Q676
(EHT)
CHOPPER OUT Q680 , L601 C681
HD (5)
EHT F/B
F B T
T601
9
8
14
4
11
12
1
6
5
(3) EHT
(3) S_FOCUS
(3) D_FOCUS
(3) ABL
(3) FOCUS
(9) DAF
(9) G2_DEGAUSS_B
VOL DIVIDER R606 - R609 R621 , R622
(9) H_DAF_B
(9) V_DAF_B
D604
(3) G1_B
D602
(5) P_STOP
*

SHETT (9) TILT CONTROL / DAF OUT / MOIRE REDUCTION

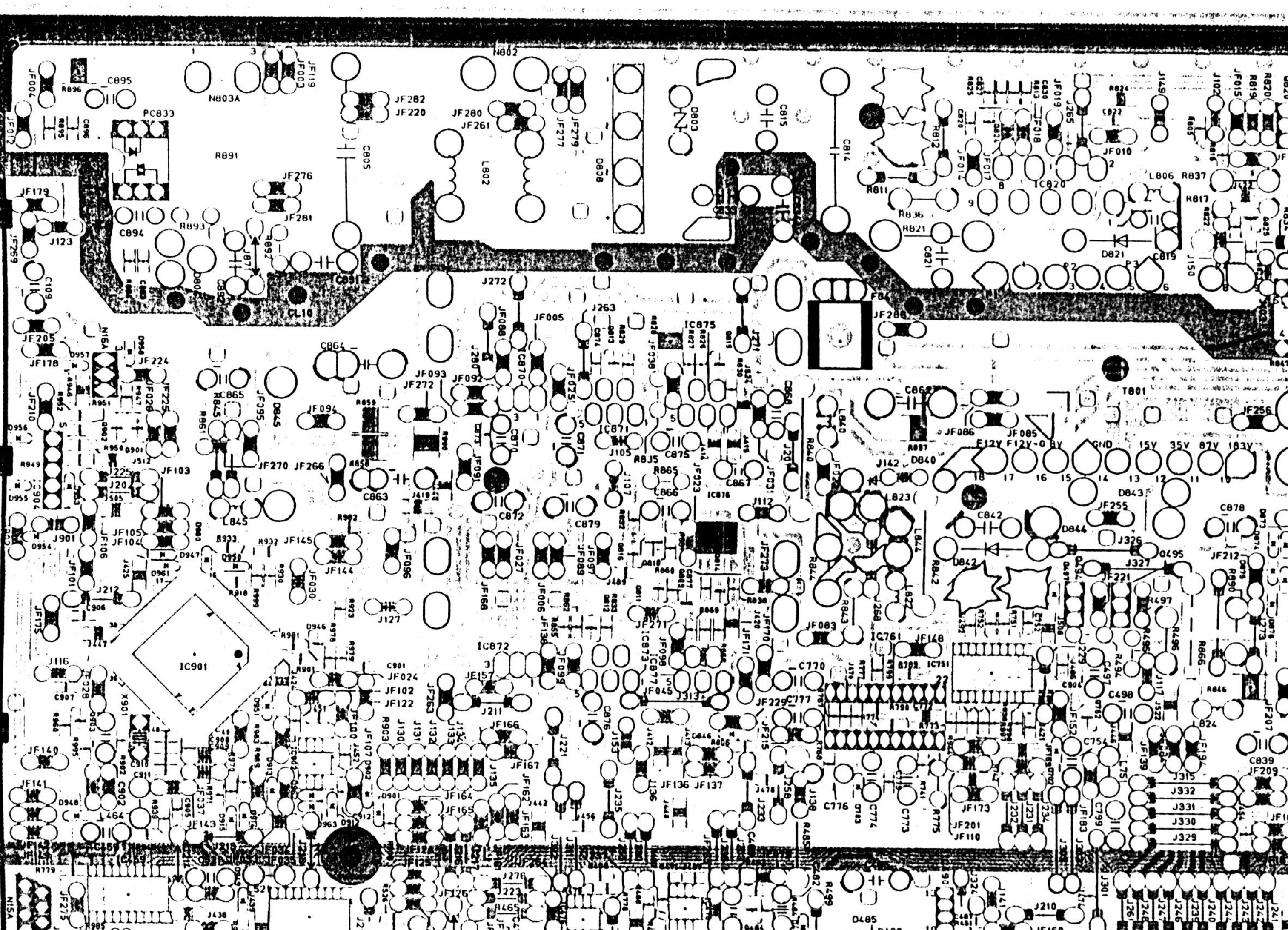

Z_AXIS (4)
HEATER 2 (6)
6V
TILT CONTROL IC101 (2/4)
TILT CONTROL IC101 (1/4)
TILT OUT Q101 , Q102
TILT OUT Q103 , Q104
N101
1
2
TILT COIL


H_DAF_B (8)
V_DAF_B (8)
VS (4)
Q321
H_PULSE 2 (5)
DAF_GAIN_H (4)
DAF_GAIN_V (4)
DAF_POSI_H (4)
DAF_POSI_V (4)
20
3
12
19
6
25
H/V PARABOLIC GENERATOR
H/V DAF GAIN CONTROL
IC301
15
16
V
H
AMP IC302 (1/4)
AMP IC302 (1/4)
V. DAF OUT Q319
H DAF DRIVE Q301 , Q302
H DAF OUT Q304 , Q305 Q306 , Q307
AMP IC302 (1/4)
(8) DAF


HS (2)
VS (2)
VID_MOIRE_ON (4)
RAS_MOIRE_ON (4)
VID_MOIRE_G (4)
RAS_MOIRE_G (4)
V MOIRE GAIN
H MOIRE GAIN
7
6
8
9
5
5
MOIRE REDUCTION CONTROL
IC462
11
2
V MOIRE DRIVE
H MOIRE DRIVE
VID_MOIRE_D (5)
RAS_MOIRE_D (5)

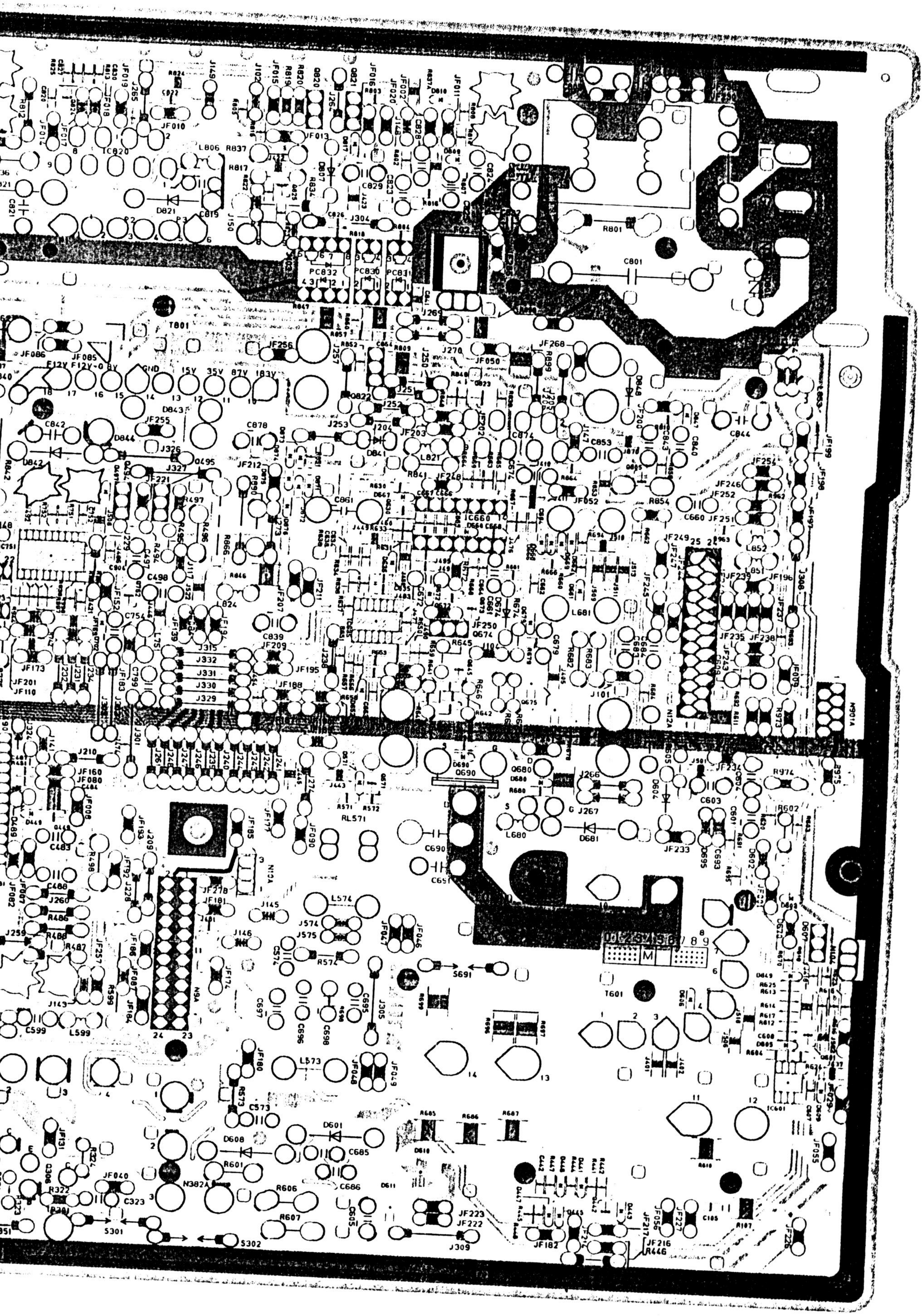
CONDUCTOR VIEW

r side)

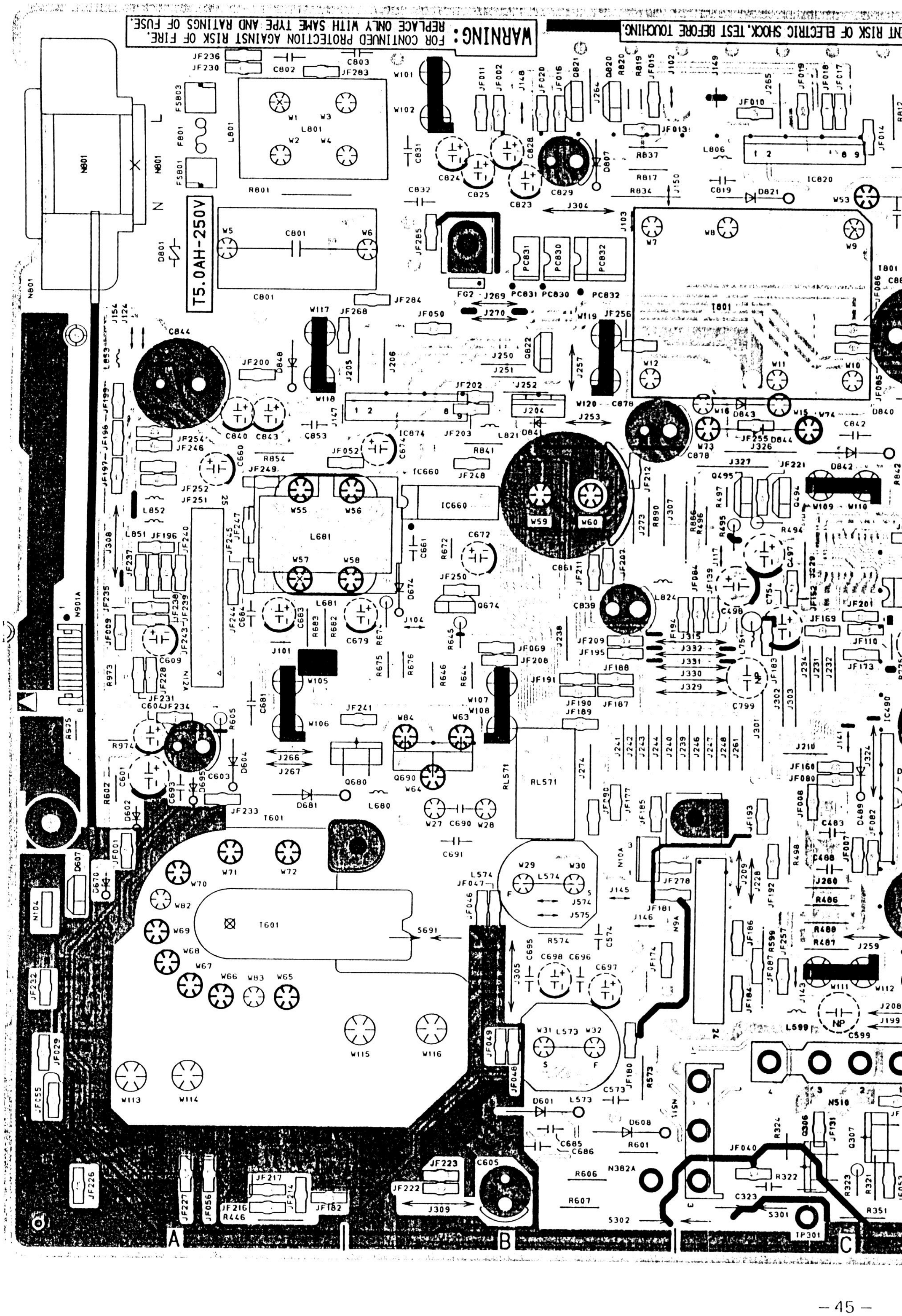


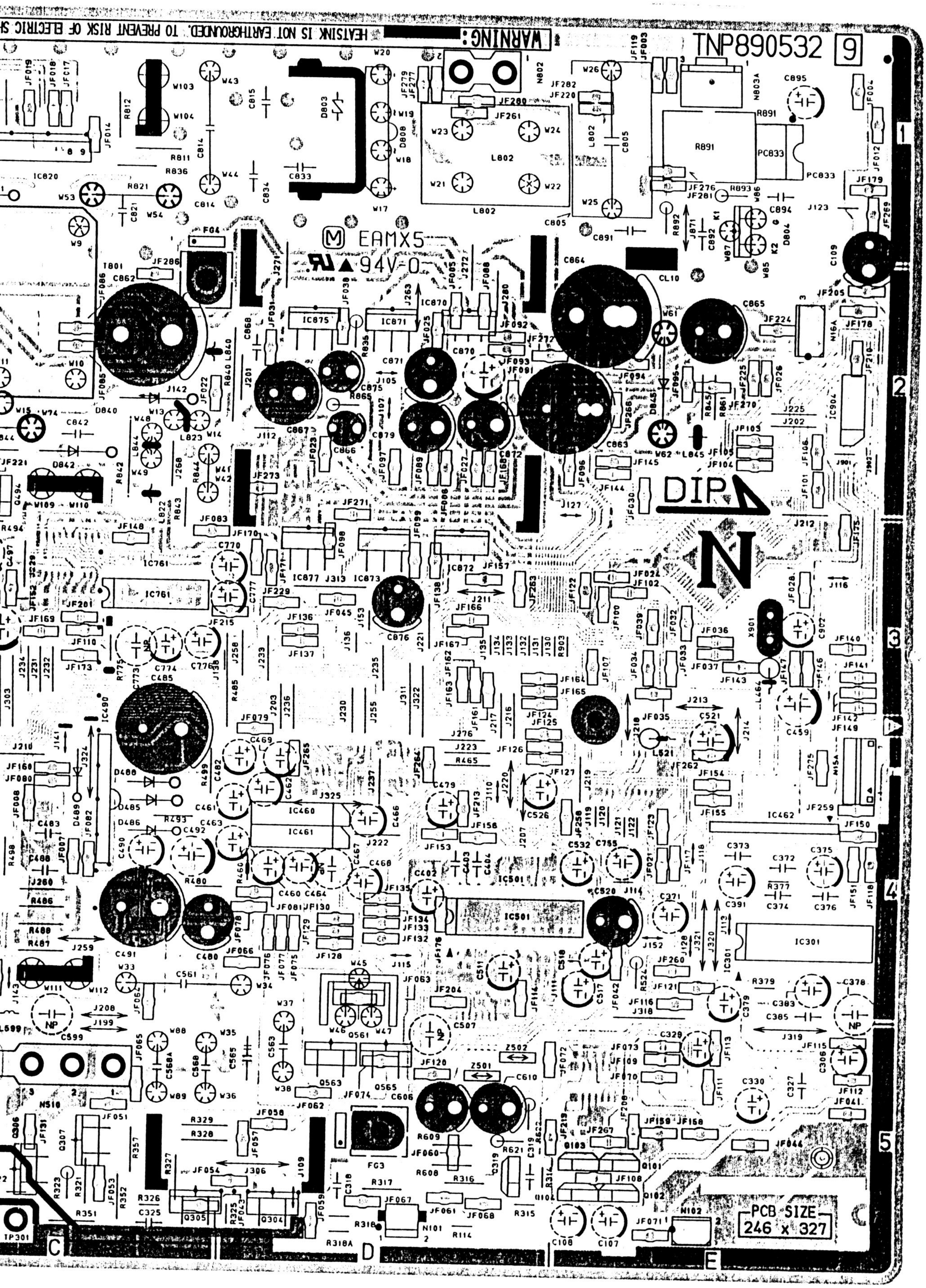
N802
N803A
PC833
R891
JF282
JF220
JF280
JF261
L802
D808
D803
C815
C814
IC820
L806
R837
R817
D821
C821
R836
R821
R811
CL10
C894
J123
JF179
JF205
JF178
N16A
JF224
C864
JF093
JF272
JF092
JF005
J263
IC875
J272
JF288
T801
JF266
JF086
JF085
F12V
F12V-0
8Y
GND
15V
35V
87V
183V
J142
D840
L823
L844
D842
D843
D844
JF255
C842
C878
J326
J327
JF212
JF221
IC901
X901
J116
JF140
JF141
JF175
J212
J901
JF105
JF104
JF106
JF101
JF103
JF145
JF144
JF096
J127
IC872
JF024
JF102
JF122
JF157
J211
JF166
JF167
JF164
JF165
JF136
JF137
JF045
JF229
C777
C770
C776
C774
C773
IC761
JF148
IC751
JF173
JF201
JF110
JF083
C754
JF139
J315
J332
J331
J330
J329
C839
JF209
JF143
N15A
JF275
JF259
IC502
C462
IC301
C375
C376
C373
C755
J120
C526
J207
C404
C520
IC501
C403
C402
J152
C518
JF260
JF121
JF116
J310
IC503
Z501
C507
C506
D561
Q565
Q563
Q561
C563
C565
C566
C566A
C561
JF078
JF081
C460
C461
IC460
C462
D485
D488
D486
C492
C483
J260
R486
R488
R487
J259
J208
J199
C599
L599
J143
JF160
JF080
J210
JF193
J209
N13A
N9A
JF278
JF181
J145
J146
IC101
C330
JF044
JF158
JF159
JF267
JF206
Q101
Q102
Q103
N102
JF071
C107
C108
JF073
JF109
JF070
JF112
JF041
JF113
JF111
C329
JF120
JF074
D566
FG3
C610
C606
C319
R608
R316
R315
JF068
JF067
N101
R114
R317
R318
R318A
JF059
Q304
JF054
J306
Q305
R326
R329
R328
JF051
JF131
JF040
C323
R322
R321
R351
S301
S302
N382A
D608
R601
C573
JF180
C697

UCTOR VIEW

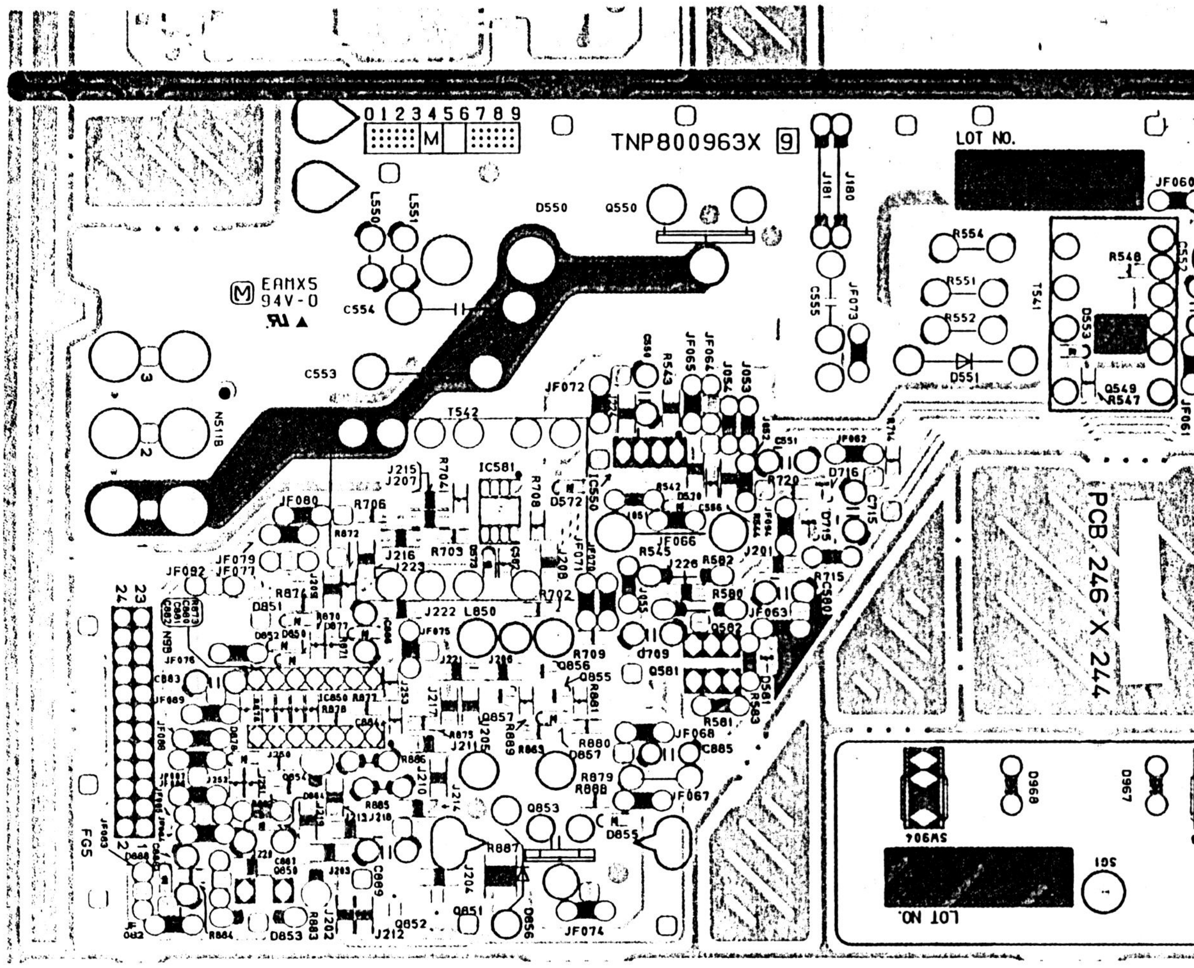

IC820
PC832
PC830
PC831
T801
R801
C801
L806
R837
R817
D821
C819
C829
J304
F12V
F12V-0
8V
GND
15V
35V
87V
183V
D843
D844
D842
C842
C878
J326
J327
Q495
JF221
JF212
JF255
JF256
JF268
R899
J270
JF050
Q822
J251
J252
J253
J204
JF203
D841
L821
R841
JF248
IC660
Q674
JF250
R645
C853
C844
C840
C843
D848
F199
JF254
JF246
JF252
JF251
R854
C660
L852
L851
JF249
JF239
JF196
J308
JF237
JF235
JF238
JF243
JF052
L681
C679
R682
R683
J101
N12A
R611
R973
M901A
J315
J332
J331
J330
J329
JF209
JF188
JF195
C839
C754
JF173
JF201
JF110
J210
JF160
JF080
C484
JF008
C483
C488
J260
R486
R488
R487
J259
JF257
J143
C599
L599
R599
N10A
N9A
JF278
JF181
J145
J146
L574
J574
J575
R574
C574
JF047
JF046
S691
T601
C690
C691
Q690
D690
Q680
D680
R680
L680
J266
J267
D681
JF233
D604
C603
C601
C693
C695
R974
R602
D602
J305
C697
C696
C698
L573
JF048
JF049
JF180
R573
C573
D601
D608
R601
C685
C686
R606
R607
N382A
C323
S301
S302
J309
JF223
JF222
JF182
JF217
JF216
R446
JF056
JF227
JF055
JF228
R605
R606
R607
D610
R610
IC601
J401
J402
D616
D805
R604
C608
D607
M102
RL571
R571
R572
JF131
R324
C306
R322
JF040

MAIN BOARD (Parts side)


WARNING : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE AND RATINGS OF FUSE.
RISK OF ELECTRIC SHOCK, TEST BEFORE TOUCHING.
T5.0AH-250V
N801
F801
FS801
FS803
L801
C801
D801
R801
C844
IC660
L681
T601
T801
RL571
IC820
IC874
L573
L574
N901A
N12A
N510
S302
S301
TP301
A
B
C


WARNING: HEATSINK IS NOT EARTHGROUNDED. TO PREVENT RISK OF ELECTRIC SH
TNP890532 9
EAMX5
94V-0
DIP
N
PCB SIZE
246 x 327
1
2
3
4
5
C
D
E
IC820
IC875
IC871
IC870
IC761
IC877
IC873
IC872
IC460
IC461
IC462
IC501
IC301
L802
T801
CL10
FG3
N101
N102
N510
N803A
N16A
N15A
PC833
R891
X901
TP301

DEF. BOARD (Soldr side)


TNP800963X 9
0 1 2 3 4 5 6 7 8 9
LOT NO.
EAMX5
94V-0
PCB 246 X 244
T542
T541
IC581
D550
Q550
L550
L551
C554
C553
C555
J181
J180
R554
R551
R552
D551
R548
Q549
R547
JF072
JF080
JF079
JF077
JF092
L850
J222
D851
R887
Q853
D855
Q851
JF074
D853
R883
Q852
J212
D968
D967
SW904
FG5
23
24
1
2
R702
R709
Q855
Q856
Q857
Q581
Q582
D581
R583
R581
JF068
C885
R880
D857
R879
R888
JF067
R715
C580
JF063
R580
R582
J226
R545
JF066
R720
D716
D715
C715
J201
C551
J082
R543
JF065
JF064
J054
J053
D572
C550
J215
J207
R704
R706
R708
R703
J216
J223
J208
J205
J211
R889
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J214
J204
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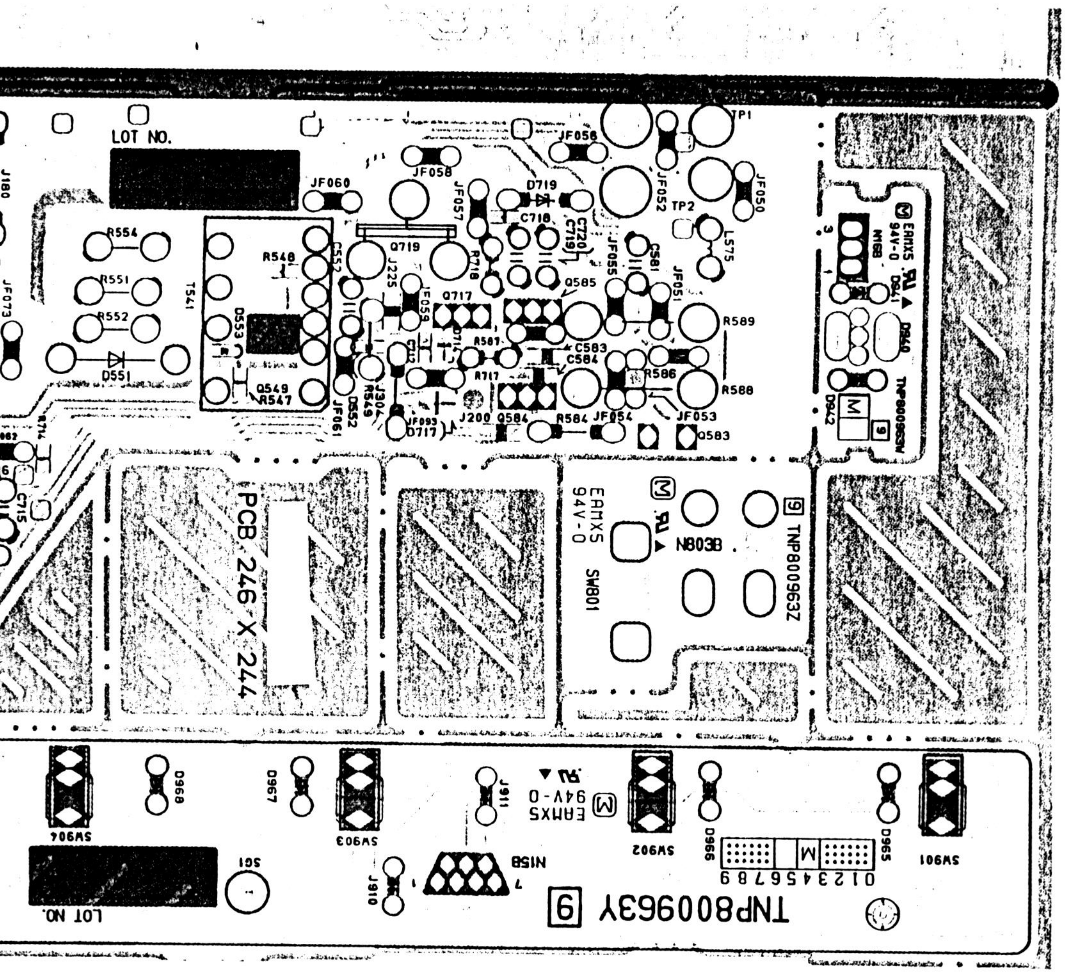
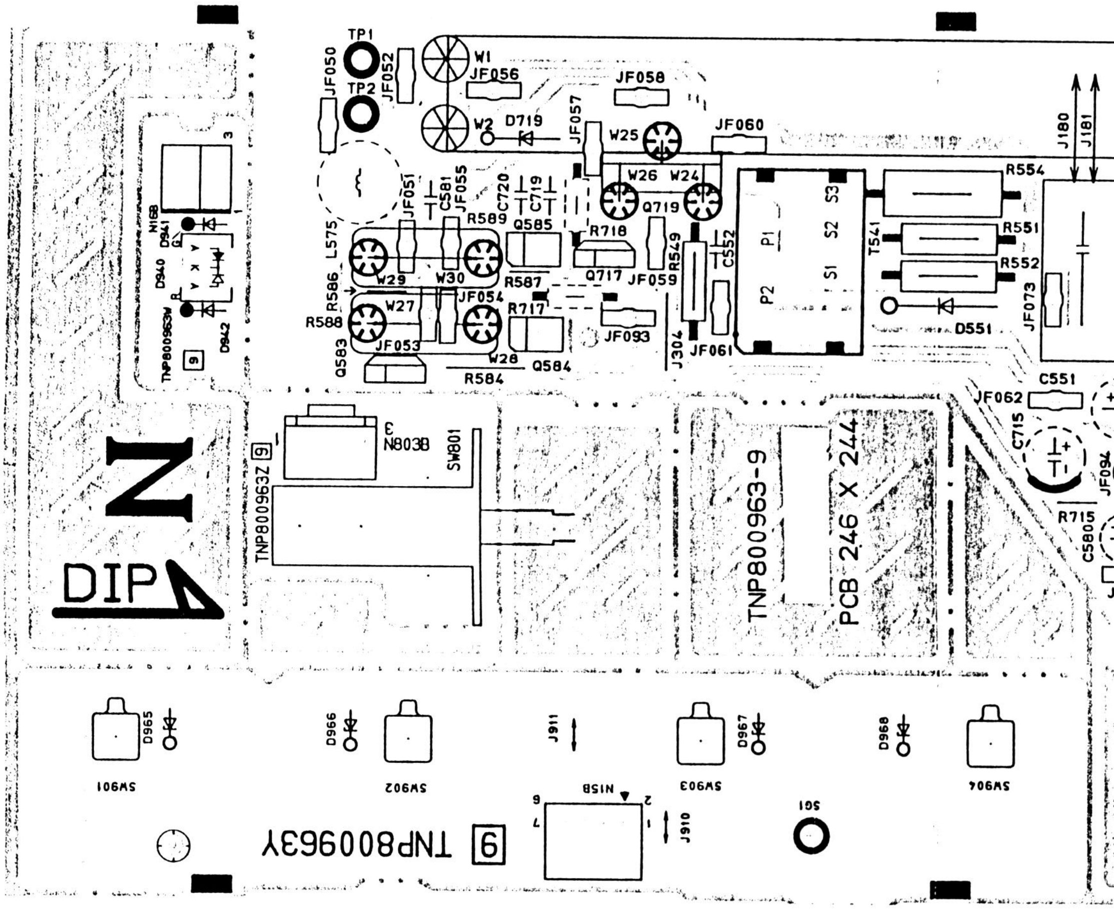
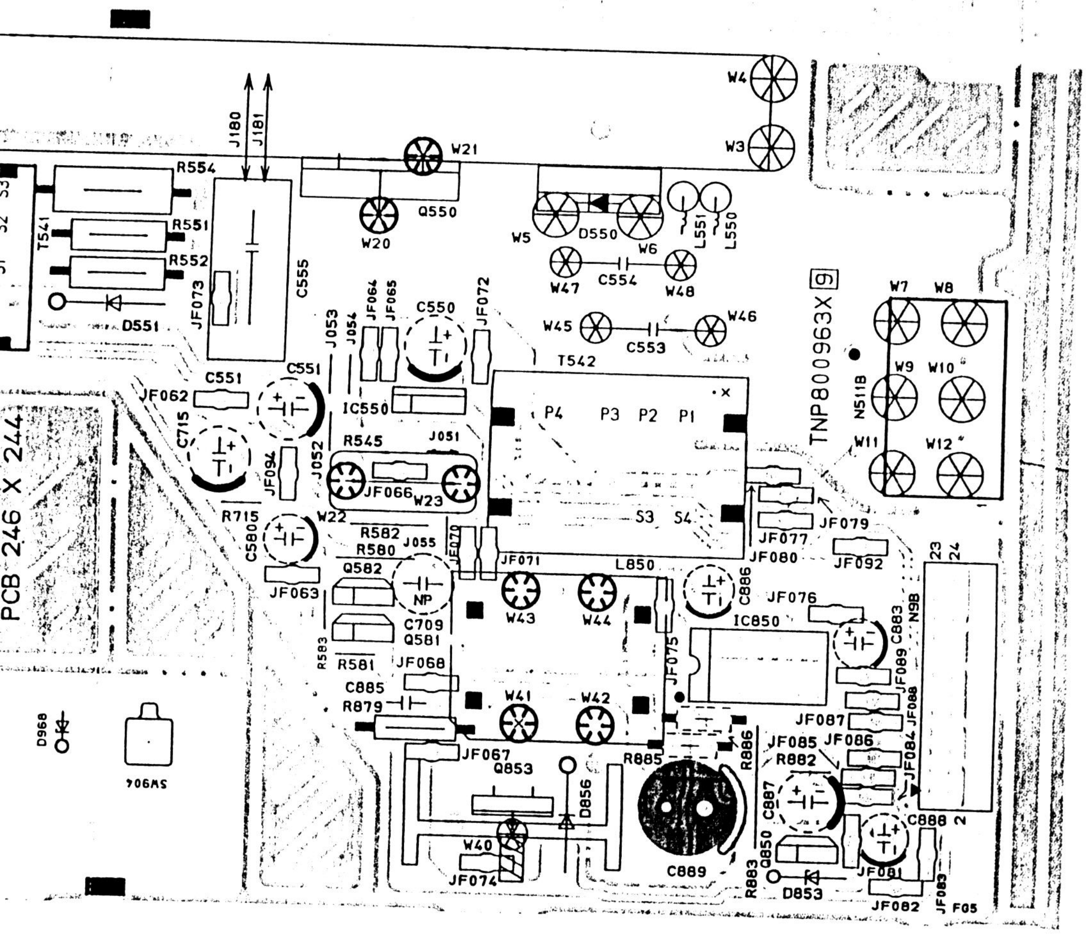
J203
C889
JF060
JF061
D553
N511B
3
2


LOT NO.
JF060
JF058
JF056
TP1
JF057
D719
C718
C720
C719
JF052
TP2
JF050
L575
R554
R551
R552
D551
T541
R548
C552
Q719
J225
R718
JF055
C581
JF051
JF059
Q717
Q585
R589
D553
R587
C583
C584
R717
R586
R588
Q549
R547
J304
R549
D552
JF061
JF093
D717
J200
Q584
R584
JF054
JF053
Q583
C715
J180
JF073
EAMX5
94V-0
N1GB
D941
D940
D942
TNP8009632W
9
M
PCB 246 X 244
EAMX5
94V-0
N803B
SW801
9
TNP80096
3Z
SW904
D968
D967
SW903
J911
EAMX5
94V-0
SW902
D966
D965
SW901
SG1
LOT NO.
J910
N1SB
0123456789
TNP80096
3Y
9

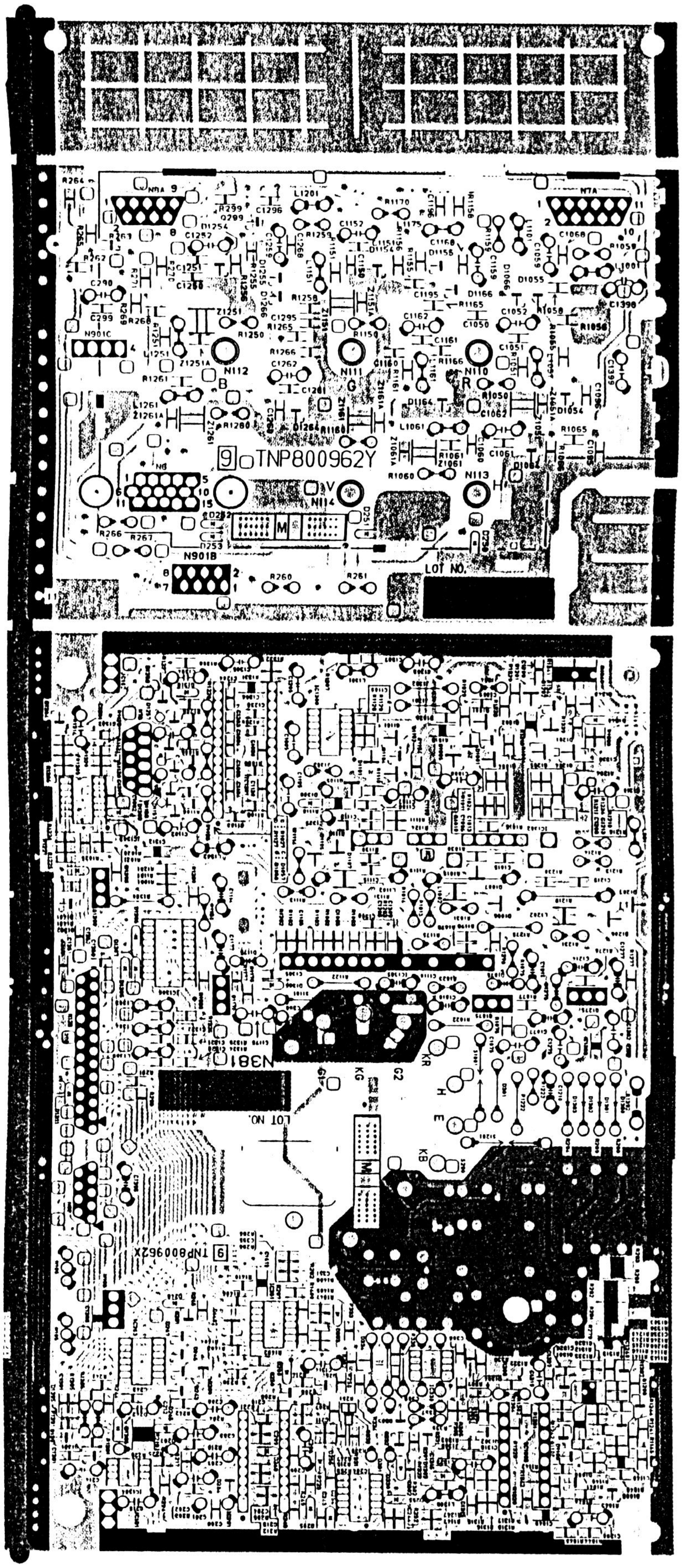
H. DEF. BOARD (Parts side)


TP1
TP2
JF050
JF052
W1
W2
JF056
JF058
D719
JF057
W25
JF060
J180
J181
R554
L575
JF051
C581
JF055
C720
C719
R589
Q585
W26
W24
Q719
R718
R549
C552
P1
P2
S1
S2
S3
T541
R551
R552
R586
W29
W30
R587
Q717
JF059
R588
W27
JF054
R717
JF093
J304
JF061
D551
JF073
Q583
JF053
W28
Q584
R584
C551
JF062
C715
JF094
R715
C580
N168
D941
D940
D942
TNP800963W
9
N803B
SW801
TNP800963Z
9
DIP
TNP800963-9
PCB 246 X 244
D965
D966
J911
D967
D968
SW901
SW902
SW903
SW904
N1SB
J910
SG1
TNP800963Y
9

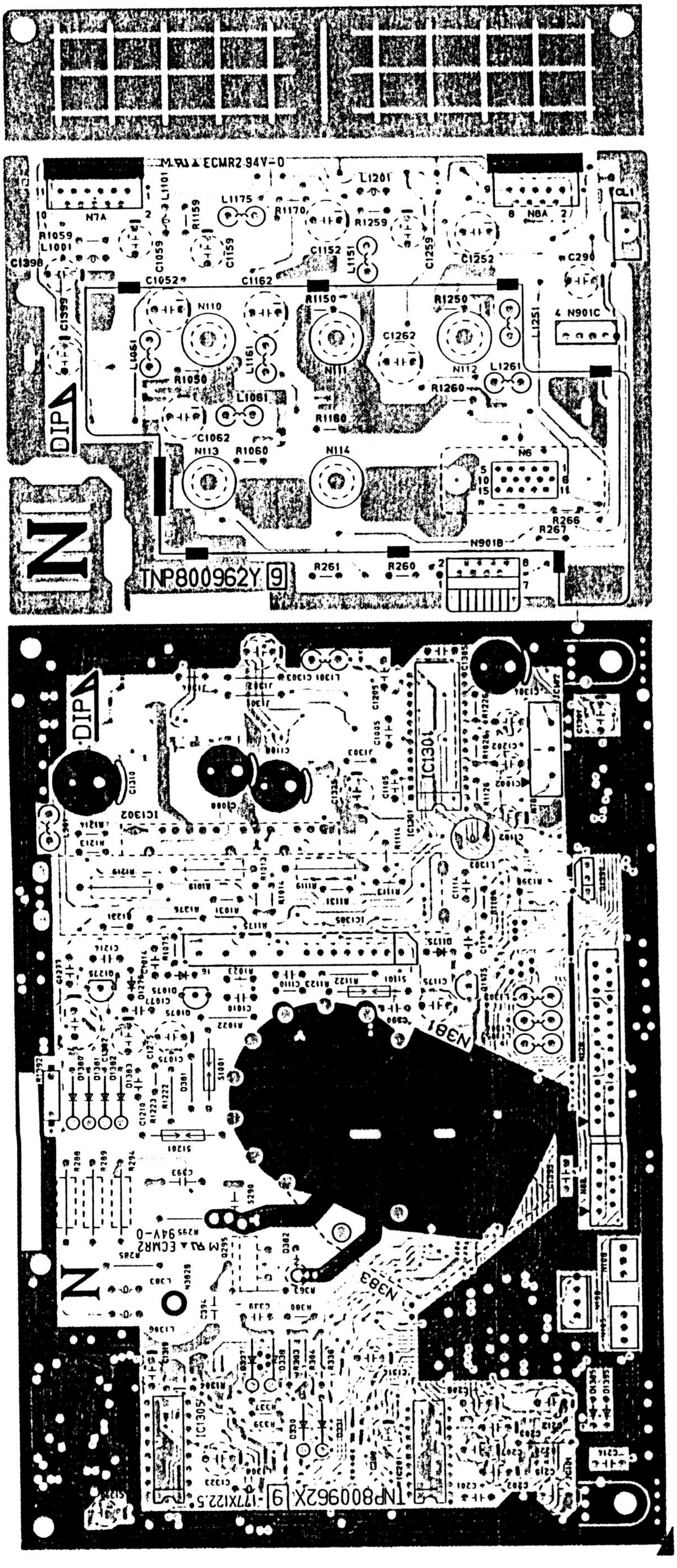


PCB 246 X 244
TNP800963X 9
W4
W3
W21
J180
J181
R554
R551
R552
T541
D551
JF073
C555
Q550
W20
W5
D550
W6
L551
L550
W47
C554
W48
W45
C553
W46
T542
P4
P3
P2
P1
S3
S4
W7
W8
W9
W10
W11
W12
N511B
C550
JF064
JF065
JF072
J053
J054
C551
JF062
C715
IC550
R545
J051
J052
JF094
JF066
W23
W22
R715
C580
R582
R580
J055
JF070
JF071
Q582
JF063
C709
Q581
NP
R583
R581
JF068
C885
R879
W43
W44
W41
W42
L850
C886
JF076
IC850
JF075
JF077
JF079
JF080
JF092
C883
N9B
JF089
JF088
JF087
JF085
JF086
R882
R886
R885
JF084
C887
C888
JF081
JF082
JF083
F05
23
24
2
C889
Q850
R883
D853
D856
Q853
JF067
W40
JF074
D968
SW904

VIDEO BOARD (Solder side)


TNP800962Y
TNP800962X
N901A
N7A
N901C
N901B
N112
N111
N110
N113
N114
N381
B
G
R
V
M
LOT NO.
KR
KG
KB
G2
H
E

VIDEO BOARD (Parts side)



ECMR2 94V-0
N7A
N8A
N901C
N110
N111
N112
N113
N114
N6
N901B
TNP800962Y 9
DIPA
IC1301
IC1302
IC1305
N381
N383
TNP800962X 9 177X122.5

IMPORTANT SAFETY NOTICE

The component identified by shading or international symbol ⚠ on the following schematic diagrams incorporate special features important for protection from X-Radiation, fire and electrical shock hazards. When servicing it is essential that only manufacturer's specified parts be used for those critical components.

NOTES :

1. RESISTOR

All resistors are carbon 1/4W resistor, unless otherwise noted by the following marks.
Unit of resistance is ohm (Ω). (K = 1,000, M = 1,000,000)

◌	Non Flammable	△	Solid
☒	Metal Oxide	Ⓒ	Metal (Precision and high stability)
☐	Wire Wound	▬	Thermistor
⊙	Fusible	▭	Positive coefficient Thermistor
⧄	Flame Proof Rectangular		

2. CAPACITOR

All capacitors are ceramic 50V capacitor, unless otherwise noted by the following marks.
Unit of capacitance is μF, unless otherwise noted.

+‖	Electrolytic	Ⓜ	Polyester
Ⓣ	Tantalum	ⓜ	Metalized Polyester
NP	Bipolar	☒	Polypropylene
Ⓢ	Polystyrene	△	Mica
⊘	Temperature Compensation	◌	Ceramic
		◎	Ceramic (SL)

3. COIL

Unit of inductance is μH, unless otherwise noted.

4. VOLTAGE MEASUREMENT

Voltage is measured by a digital meter receiving normal signal.

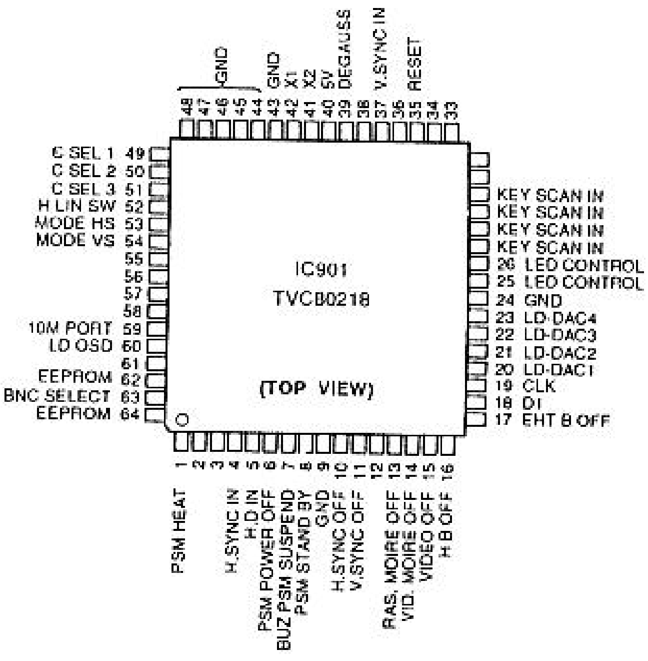
5. **This schematic diagram is the latest at the time of printing and is subject to change without notice.**

SERVICE NOTES :

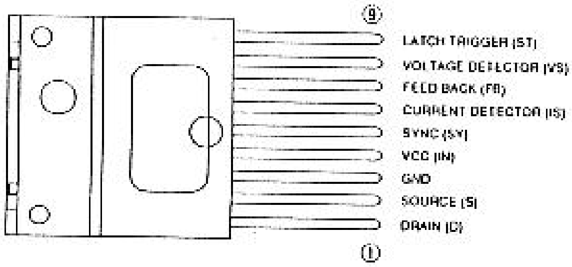
This model has a section that does not share a common ground with the power supply section. The different sections are referred to as the HOT section and the COLD section in the precautions below.

1. Do not touch the HOT section and the COLD section at the same time. You may receive an electric shock.
2. Do not short the HOT section to the COLD section. This could blow the fuse or damage parts.
3. Never measure the HOT section and the COLD section at the same time when using tools such as oscilloscopes or multimeters.
4. Always unplug the unit before beginning any operation such as removing the chassis.

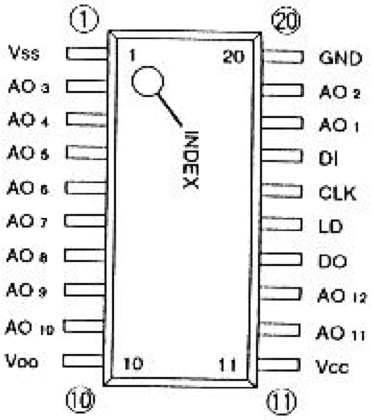
TVC80218 (IC901)


GND
48
47
46
45
44
43 GND
42 X1
41 X2
40 5V
39 DEGAUSS
38
37 V.SYNC IN
36
35 RESET
34
33
C SEL 1 49
C SEL 2 50
C SEL 3 51
H LIN SW 52
MODE HS 53
MODE VS 54
55
56
57
58
10M PORT 59
LD OSD 60
61
EEPROM 62
BNC SELECT 63
EEPROM 64
KEY SCAN IN
KEY SCAN IN
KEY SCAN IN
KEY SCAN IN
26 LED CONTROL
25 LED CONTROL
24 GND
23 LD-DAC4
22 LD-DAC3
21 LD-DAC2
20 LD-DAC1
19 CLK
18 DI
17 EHT 8 OFF
IC901
TVC80218
(TOP VIEW)
1 PSM HEAT
2
3
4 H.SYNC IN
5 H.D IN
6 PSM POWER OFF
7 BUZ PSM SUSPEND
8 PSM STAND BY
9 GND
10 H.SYNC OFF
11 V.SYNC OFF
12
13 RAS. MOIRE OFF
14 VID. MOIRE OFF
15 VIDEO OFF
16 H B OFF

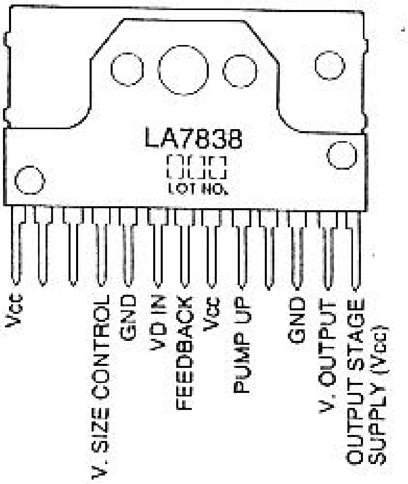
STR-S6533 (IC820)


⑨
LATCH TRIGGER (ST)
VOLTAGE DETECTOR (VS)
FEED BACK (FB)
CURRENT DETECTOR (IS)
SYNC (SY)
VCC (IN)
GND
SOURCE (S)
DRAIN (D)
①

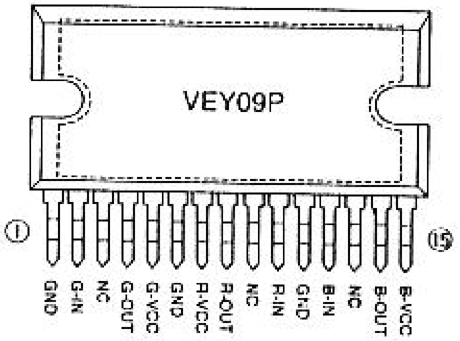
MB88346BPFTF
(IC502, IC751, IC1306, IC459)


①
⑳
Vss
AO 3
AO 4
AO 5
AO 6
AO 7
AO 8
AO 9
AO 10
VDD
1
20
10
11
INDEX
GND
AO 2
AO 1
DI
CLK
LD
DO
AO 12
AO 11
Vcc
⑩
⑪

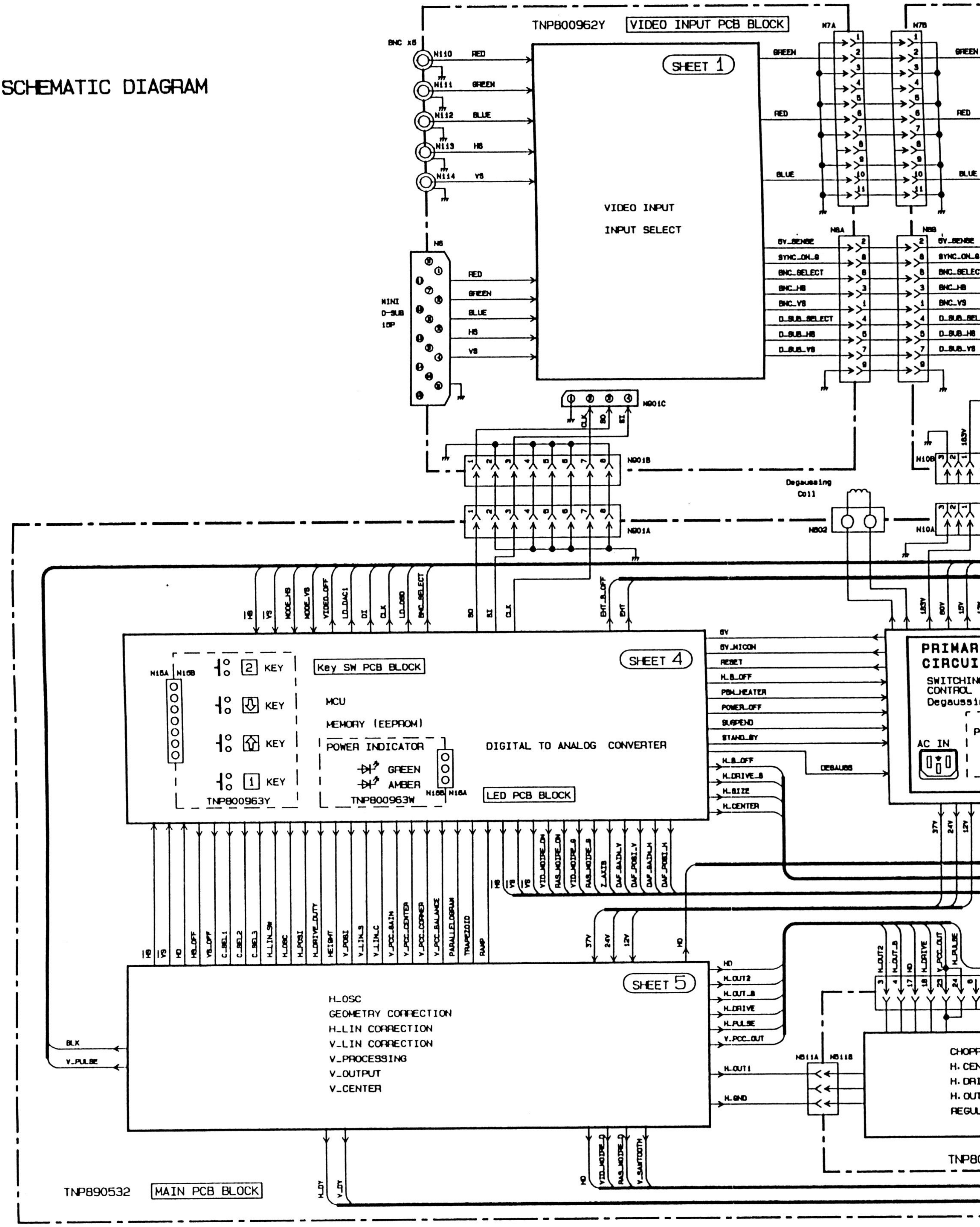
LA7838 (IC490)

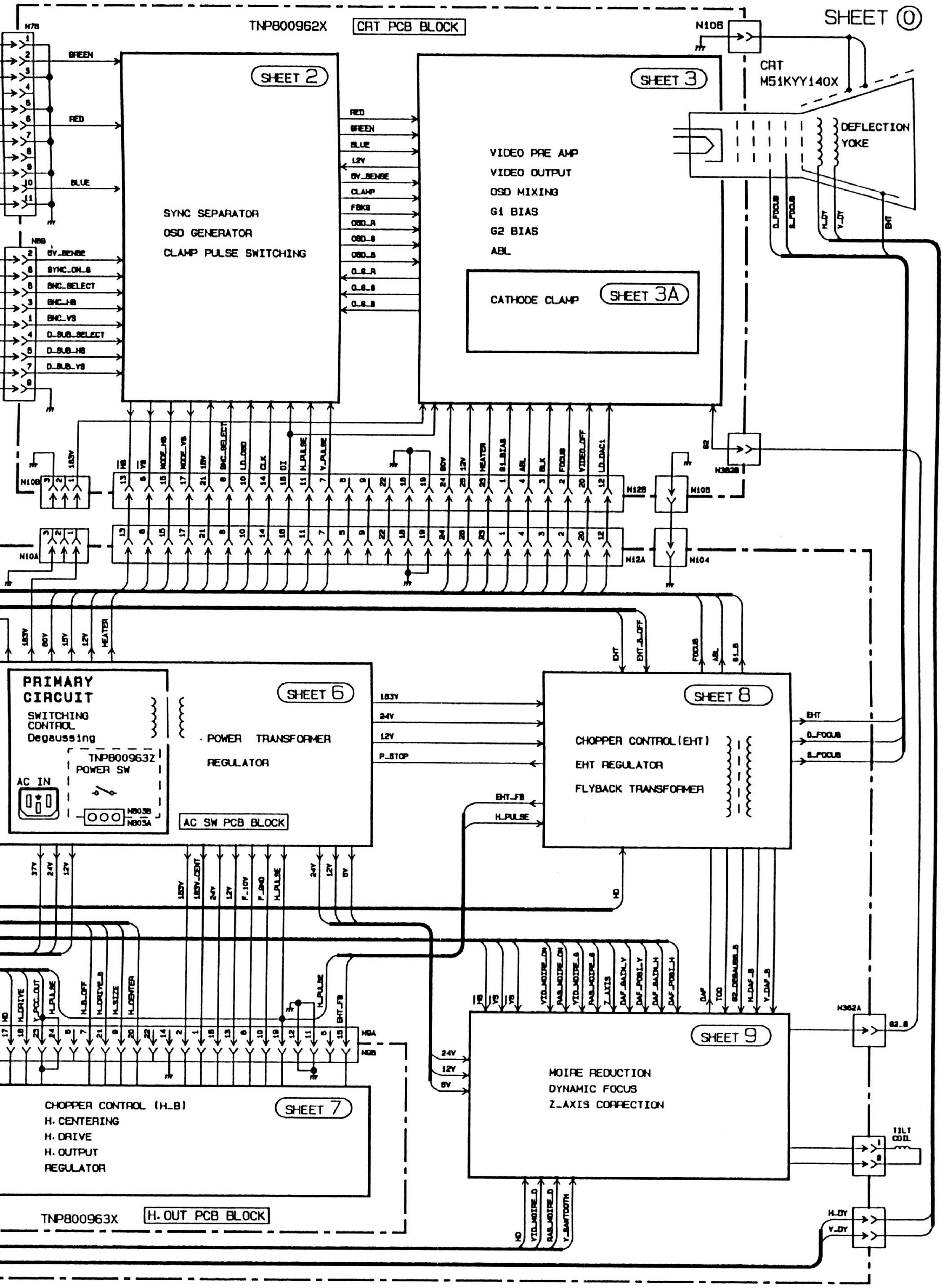

LA7838
LOT NO.
Vcc
V. SIZE CONTROL
GND
VD IN
FEEDBACK
Vcc
PUMP UP
GND
V. OUTPUT
OUTPUT STAGE SUPPLY (Vcc)

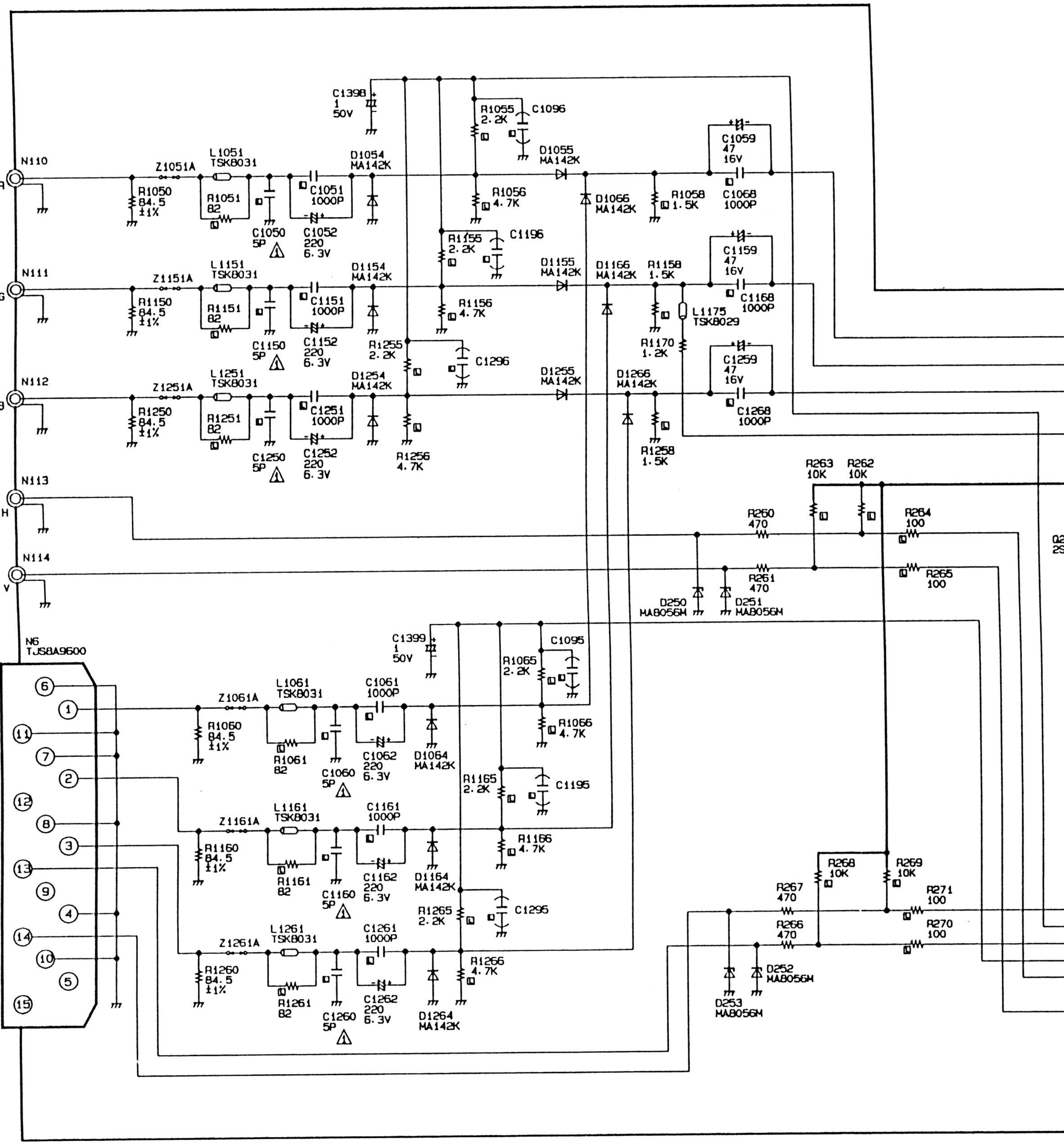
VEY09P (IC1302)


VEY09P
①
⑮
GND
G-IN
NC
G-OUT
G-VCC
GND
R-VCC
R-OUT
NC
R-IN
GND
B-IN
NC
B-OUT
B-VCC

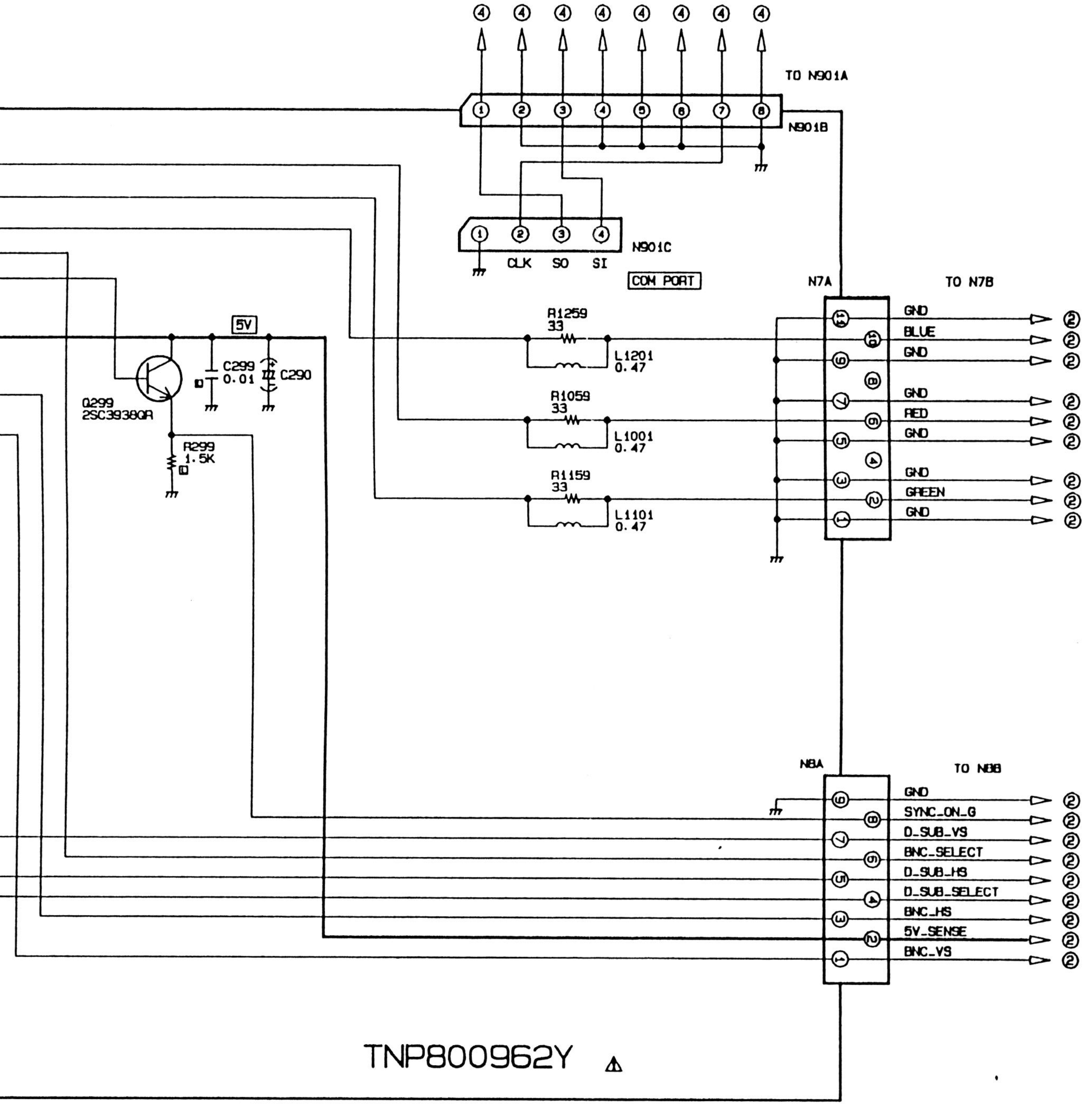
SCHEMATIC DIAGRAM


TNP800962Y
VIDEO INPUT PCB BLOCK
SHEET 1
VIDEO INPUT
INPUT SELECT
BNC x5
N110
N111
N112
N113
N114
RED
GREEN
BLUE
HS
VS
N5
MINI
D-SUB
15P
N7A
N7B
N8A
N8B
5V_SENSE
SYNC_ON_G
BNC_SELECT
BNC_HS
BNC_VS
D_SUB_SELECT
D_SUB_HS
D_SUB_VS
N901C
CLK
SO
SI
N901B
N901A
N10B
N10A
N802
Degaussing
Coil
185V
80V
15V
EHT_B_OFF
EHT
MODE_HS
MODE_VS
VIDEO_OFF
LD_DAC1
DI
LD_OSD
BNC_SELECT
SHEET 4
N15A
N15B
2 KEY
KEY
KEY
1 KEY
TNP800963Y
Key SW PCB BLOCK
MCU
MEMORY (EEPROM)
POWER INDICATOR
GREEN
AMBER
N16B
N16A
TNP800963W
LED PCB BLOCK
DIGITAL TO ANALOG CONVERTER
5V
5V_MICON
RESET
H_B_OFF
PBM_HEATER
POWER_OFF
SUSPEND
STAND_BY
DEGAUSS
H_B_OFF
H_DRIVE_S
H_SIZE
H_CENTER
PRIMAR
CIRCUI
SWITCHIN
CONTROL
Degaussi
AC IN
37V
24V
12V
VID_MOIRE_ON
RAS_MOIRE_ON
VID_MOIRE_S
RAS_MOIRE_S
Z_AXIS
DAF_GAIN_V
DAF_POSI_V
DAF_GAIN_H
DAF_POSI_H
HD
HS_OFF
VS_OFF
C_SEL1
C_SEL2
C_SEL3
H_LIN_SW
H_OSC
H_POSI
H_DRIVE_DUTY
HEIGHT
V_POSI
V_LIN_S
V_LIN_C
V_PCC_GAIN
V_PCC_CENTER
V_PCC_CORNER
V_PCC_BALANCE
PARALLELOGRAM
TRAPEZOID
RAMP
SHEET 5
H_OSC
GEOMETRY CORRECTION
H_LIN CORRECTION
V_LIN CORRECTION
V_PROCESSING
V_OUTPUT
V_CENTER
HD
H_OUT2
H_OUT_S
H_DRIVE
H_PULSE
V_PCC_OUT
H_OUT1
H_GND
N511A
N511B
BLK
V_PULSE
H_5V
V_5V
VID_MOIRE_O
RAS_MOIRE_O
V_SAWTOOTH
CHOPP
H. CEN
H. DRI
H. OUT
REGUL
TNP8
TNP890532
MAIN PCB BLOCK

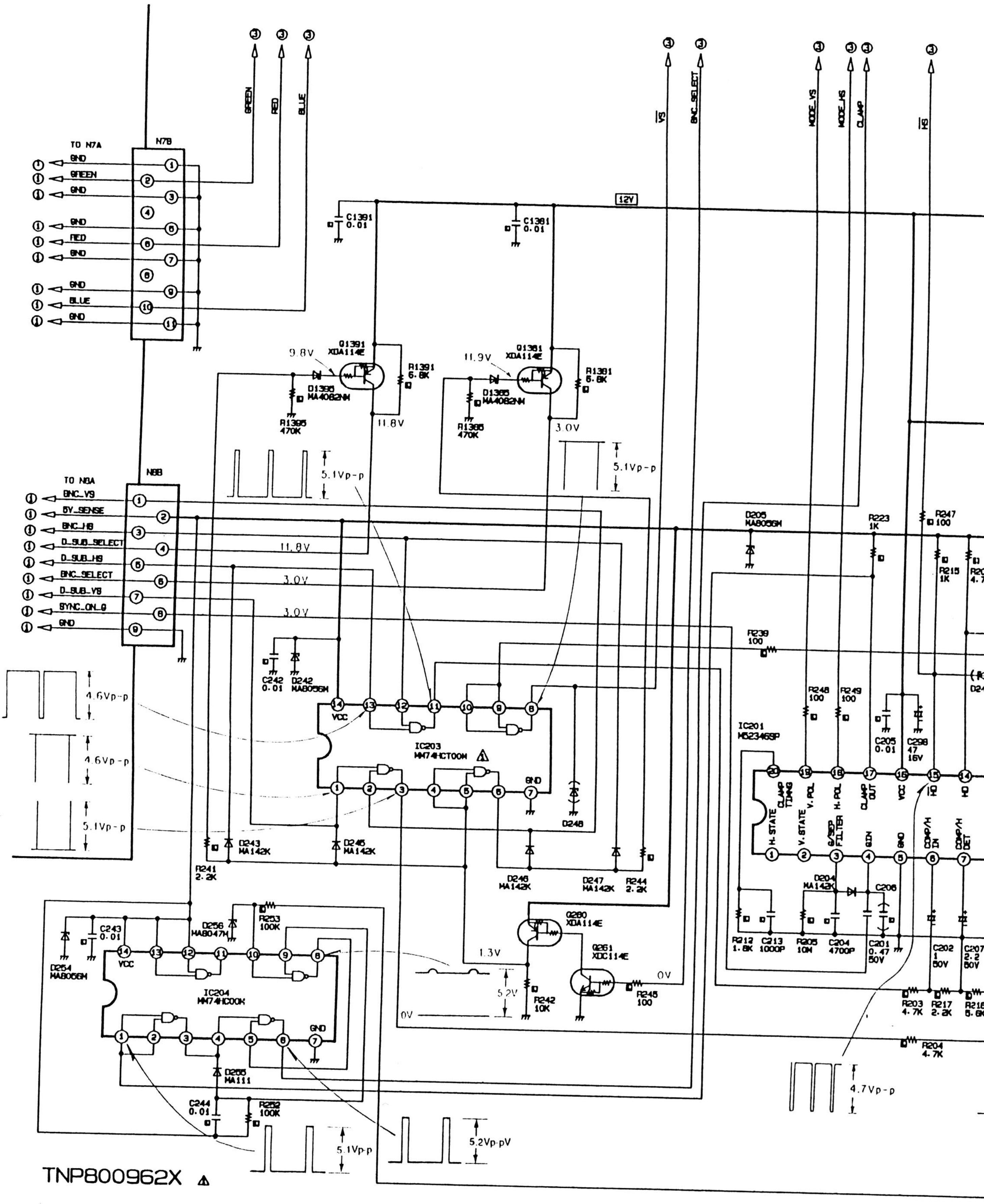

TNP800962X
CRT PCB BLOCK
SHEET ⓪
N78
GREEN
RED
BLUE
N106
CRT
M51KYY140X
DEFLECTION
YOKE
SHEET 2
SYNC SEPARATOR
OSD GENERATOR
CLAMP PULSE SWITCHING
SHEET 3
VIDEO PRE AMP
VIDEO OUTPUT
OSD MIXING
G1 BIAS
G2 BIAS
ABL
CATHODE CLAMP
SHEET 3A
RED
GREEN
BLUE
12V
5V_SENSE
CLAMP
FBKG
OSD_R
OSD_G
OSD_B
O_G_R
O_G_G
O_G_B
N88
5V_SENSE
SYNC_ON_G
BNC_SELECT
BNC_HS
BNC_VS
D_SUB_SELECT
D_SUB_HS
D_SUB_VS
D_FOCUS
S_FOCUS
H_DY
V_DY
EHT
183V
HS
VS
MODE_HS
MODE_VS
15V
BNC_SELECT
LD_OSD
CLK
DI
H_PULSE
V_PULSE
80V
12V
HEATER
G1_BIAS
ABL
BLK
FOCUS
VIDEO_OFF
LD_DAC1
G2
N382B
N10B
N12B
N105
N10A
N12A
N104
183V
80V
15V
12V
HEATER
EHT
EHT_B_OFF
FOCUS
ABL
G1_B
PRIMARY
CIRCUIT
SWITCHING
CONTROL
Degaussing
TNP800963Z
POWER SW
AC IN
N803B
N803A
AC SW PCB BLOCK
SHEET 6
POWER TRANSFORMER
REGULATOR
183V
24V
12V
P_STOP
SHEET 8
CHOPPER CONTROL(EHT)
EHT REGULATOR
FLYBACK TRANSFORMER
EHT
D_FOCUS
S_FOCUS
EHT_FB
H_PULSE
37V
24V
12V
183V
183V_CENT
24V
12V
F_10V
F_GND
H_PULSE
24V
12V
5V
HD
HD
H_DRIVE
Y_POC_OUT
H_PULSE
H_B_OFF
H_DRIVE_B
H_SIZE
H_CENTER
H_PULSE
EHT_FB
N9A
N9B
HD
VS
VS
VID_MOIRE_ON
RAS_MOIRE_ON
VID_MOIRE_B
RAS_MOIRE_B
Z_AXIS
DAF_BADL_Y
DAF_POSI_Y
DAF_BADL_H
DAF_POSI_H
DAF
TCO
G2_DEMAUSS_B
H_DAF_B
Y_DAF_B
N382A
G2_B
SHEET 9
MOIRE REDUCTION
DYNAMIC FOCUS
Z_AXIS CORRECTION
24V
12V
5V
TILT
COIL
H_DY
V_DY
HD
VID_MOIRE_D
RAS_MOIRE_D
V_SAWTOOTH
CHOPPER CONTROL (H_B)
H. CENTERING
H. DRIVE
H. OUTPUT
REGULATOR
SHEET 7
TNP800963X
H. OUT PCB BLOCK

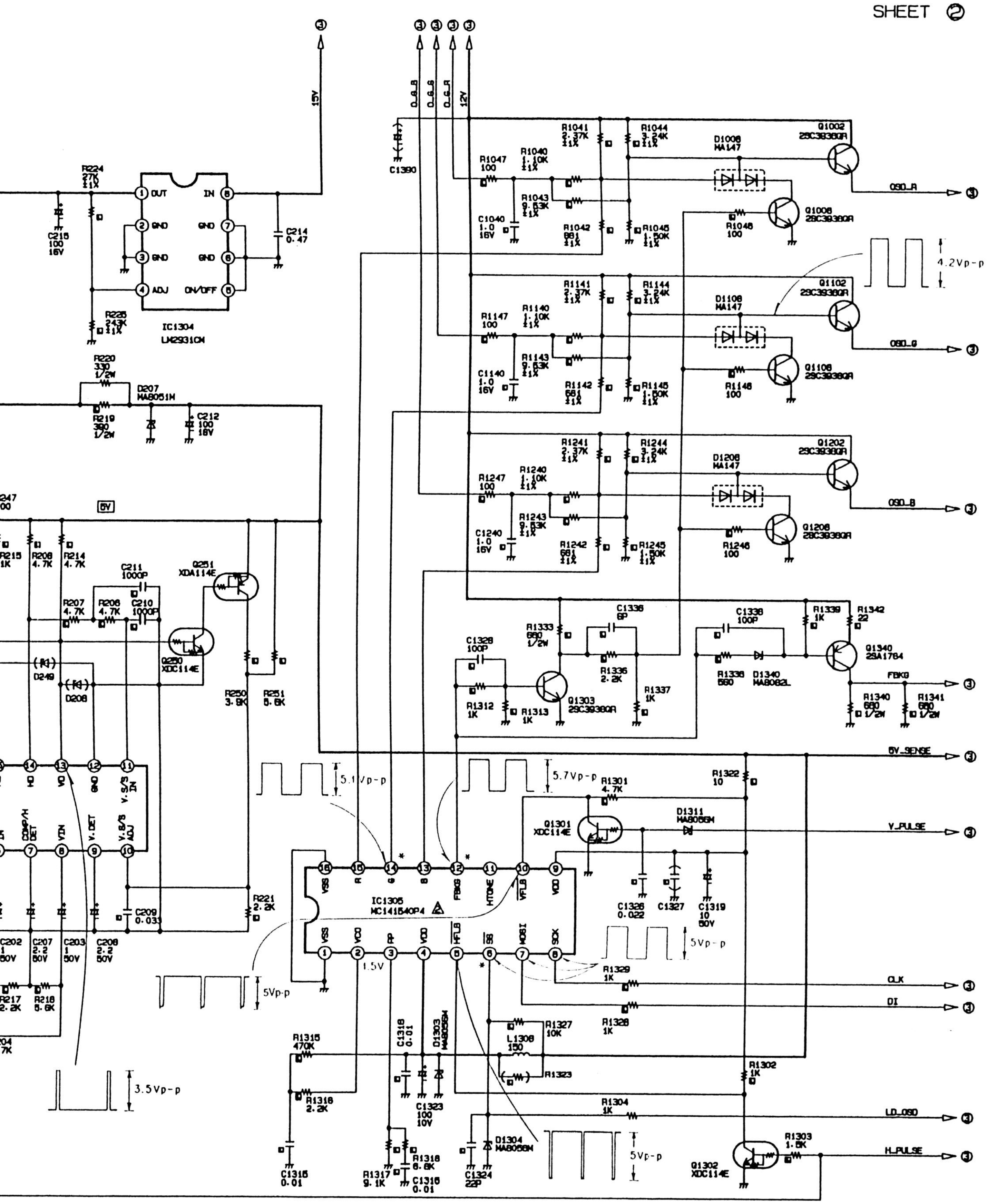

N110
R
N111
G
N112
B
N113
H
N114
V
Z1051A
L1051
TSK8031
R1050
84.5
±1%
R1051
82
C1050
5P
C1051
1000P
C1052
220
6.3V
C1398
1
50V
D1054
MA142K
R1055
2.2K
C1096
R1056
4.7K
D1055
MA142K
D1066
MA142K
R1058
1.5K
C1059
47
16V
C1068
1000P
Z1151A
L1151
TSK8031
R1150
84.5
±1%
R1151
82
C1150
5P
C1151
1000P
C1152
220
6.3V
D1154
MA142K
R1155
2.2K
C1196
R1156
4.7K
D1155
MA142K
D1166
MA142K
R1158
1.5K
C1159
47
16V
C1168
1000P
L1175
TSK8029
R1170
1.2K
R1255
2.2K
C1296
Z1251A
L1251
TSK8031
R1250
84.5
±1%
R1251
82
C1250
5P
C1251
1000P
C1252
220
6.3V
D1254
MA142K
R1256
4.7K
D1255
MA142K
D1266
MA142K
R1258
1.5K
C1259
47
16V
C1268
1000P
R263
10K
R262
10K
R260
470
R264
100
R261
470
R265
100
D250
MA8056M
D251
MA8056M
Q2
2S
N6
TJS8A9600
6
1
11
7
2
12
8
3
13
9
4
14
10
5
15
C1399
1
50V
Z1061A
L1061
TSK8031
C1061
1000P
C1095
R1065
2.2K
R1060
84.5
±1%
R1061
82
C1060
5P
C1062
220
6.3V
D1064
MA142K
R1066
4.7K
R1165
2.2K
C1195
Z1161A
L1161
TSK8031
C1161
1000P
R1160
84.5
±1%
R1161
82
C1160
5P
C1162
220
6.3V
D1164
MA142K
R1166
4.7K
C1295
R1265
2.2K
Z1261A
L1261
TSK8031
C1261
1000P
R1260
84.5
±1%
R1261
82
C1260
5P
C1262
220
6.3V
D1264
MA142K
R1266
4.7K
R268
10K
R269
10K
R267
470
R271
100
R266
470
R270
100
D252
MA8056M
D253
MA8056M

SHEET ①



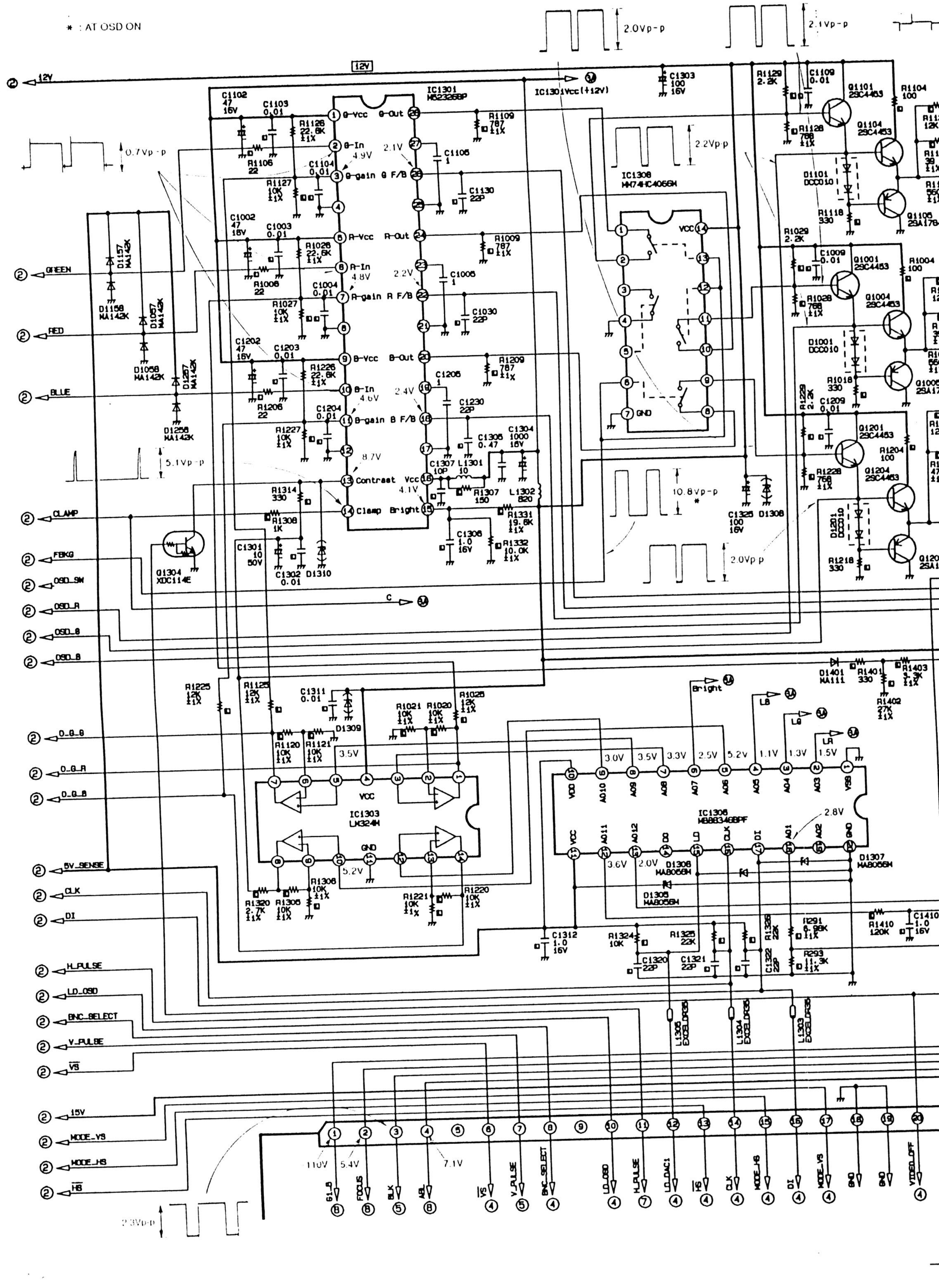
④ ④ ④ ④ ④ ④ ④ ④
TO N901A
N901B
N901C
CLK
SO
SI
COM PORT
5V
Q299
2SC3938QR
C299
0.01
C290
R299
1.5K
R1259
33
L1201
0.47
R1059
33
L1001
0.47
R1159
33
L1101
0.47
N7A
TO N7B
GND
BLUE
GND
RED
GND
GND
GREEN
GND
N8A
TO N8B
GND
SYNC_ON_G
D_SUB_VS
BNC_SELECT
D_SUB_HS
D_SUB_SELECT
BNC_HS
5V_SENSE
BNC_VS
②
TNP800962Y


③
GREEN
RED
BLUE
VS
BNC_SELECT
MODE_VS
MODE_HS
CLAMP
HS
TO N7A
N7B
GND
GREEN
RED
BLUE
12V
C1391 0.01
C1381 0.01
Q1391 XDA114E
Q1381 XDA114E
9.8V
11.9V
R1391 6.8K
R1381 6.8K
D1396 MA4082NM
D1386 MA4082NM
R1396 470K
R1386 470K
11.8V
3.0V
5.1Vp-p
TO N8A
N8B
BNC_VS
5V_SENSE
BNC_HS
D_SUB_SELECT
D_SUB_HS
BNC_SELECT
D_SUB_VS
SYNC_ON_G
D205 MA8056M
R223 1K
R247 100
R215 1K
R239 100
C242 0.01
D242 MA8056M
4.6Vp-p
VCC
IC203 MM74HCT00M ⚠
GND
D248
R241 2.2K
D243 MA142K
D245 MA142K
D246 MA142K
D247 MA142K
R244 2.2K
R248 100
R249 100
C205 0.01
C298 47 16V
IC201 M52346SP
CLAMP TIMING
V. POL
H. POL
CLAMP OUT
HO
H. STATE
V. STATE
G/SEP FILTER
SIN
COMP/H IN
COMP/H DET
D204 MA142K
C206
R212 1.8K
C213 1000P
R205 10M
C204 4700P
C201 0.47 50V
C202 1 50V
C207 2.2 50V
R203 4.7K
R217 2.2K
R204 4.7K
4.7Vp-p
C243 0.01
D254 MA8056M
D256 MA8047M
R253 100K
IC204 MM74HC00K
Q260 XDA114E
Q261 XDC114E
1.3V
5.2V
0V
R242 10K
R245 100
D255 MA111
C244 0.01
R252 100K
5.1Vp-p
5.2Vp-pV
TNP800962X ⚠


③
15V
O_S_R
O_S_G
O_S_B
12V
C1390
R224
27K
±1%
C215
100
16V
①OUT
IN⑧
②GND
GND⑦
③GND
GND⑥
④ADJ
ON/OFF⑤
C214
0.47
R225
243K
±1%
IC1304
LM2931CM
R220
330
1/2W
R219
390
1/2W
D207
MA8051M
C212
100
16V
R1041
2.37K
±1%
R1044
3.24K
±1%
D1006
MA147
Q1002
2SC3938QR
R1047
100
R1040
1.10K
±1%
R1043
9.53K
±1%
C1040
1.0
16V
R1042
681
±1%
R1045
1.50K
±1%
R1046
100
Q1006
2SC3938QR
OSD_R
4.2Vp-p
R1141
2.37K
±1%
R1144
3.24K
±1%
D1106
MA147
Q1102
2SC3938QR
R1147
100
R1140
1.10K
±1%
R1143
9.53K
±1%
C1140
1.0
16V
R1142
681
±1%
R1145
1.50K
±1%
R1146
100
Q1106
2SC3938QR
OSD_G
R1241
2.37K
±1%
R1244
3.24K
±1%
D1206
MA147
Q1202
2SC3938QR
R1247
100
R1240
1.10K
±1%
R1243
9.53K
±1%
C1240
1.0
16V
R1242
681
±1%
R1245
1.50K
±1%
R1246
100
Q1206
2SC3938QR
OSD_B
247
00
5V
R215
1K
R208
4.7K
R214
4.7K
C211
1000P
Q251
XDA114E
R207
4.7K
R206
4.7K
C210
1000P
Q250
XDC114E
D249
D208
R250
3.9K
R251
5.6K
C1336
6P
C1338
100P
R1339
1K
R1342
22
R1333
680
1/2W
C1328
100P
R1336
2.2K
R1338
560
D1340
MA8082L
Q1340
2SA1784
FBKG
R1312
1K
R1313
1K
Q1303
2SC3938QR
R1337
1K
R1340
680
1/2W
R1341
680
1/2W
5V_SENSE
HD
VD
GND
V.S/S IN
COMP/H DET
VIN
V.DET
V.S/S ADJ
5.1Vp-p
5.7Vp-p
R1322
10
R1301
4.7K
D1311
MA8056M
Q1301
XDC114E
V_PULSE
VSS
R
G
B
FBKG
HTONE
VFLB
VDD
IC1305
MC141540P4
VCO
RP
HFLB
SS
MOSI
SCK
C209
0.033
R221
2.2K
C202
1
50V
C207
2.2
50V
C203
1
50V
C206
2.2
50V
C1326
0.022
C1327
C1319
10
50V
5Vp-p
1.5V
R1329
1K
CLK
DI
R217
2.2K
R218
5.6K
04
7K
5Vp-p
C1318
0.01
D1303
MA8056M
R1327
10K
L1306
150
R1323
R1328
1K
R1315
470K
R1316
2.2K
3.5Vp-p
R1302
1K
C1323
100
10V
R1304
1K
LD_OSD
D1304
MA8056M
5Vp-p
R1303
1.5K
H_PULSE
Q1302
XDC114E
C1316
0.01
R1317
9.1K
R1318
6.8K
C1315
0.01
C1324
22P
*

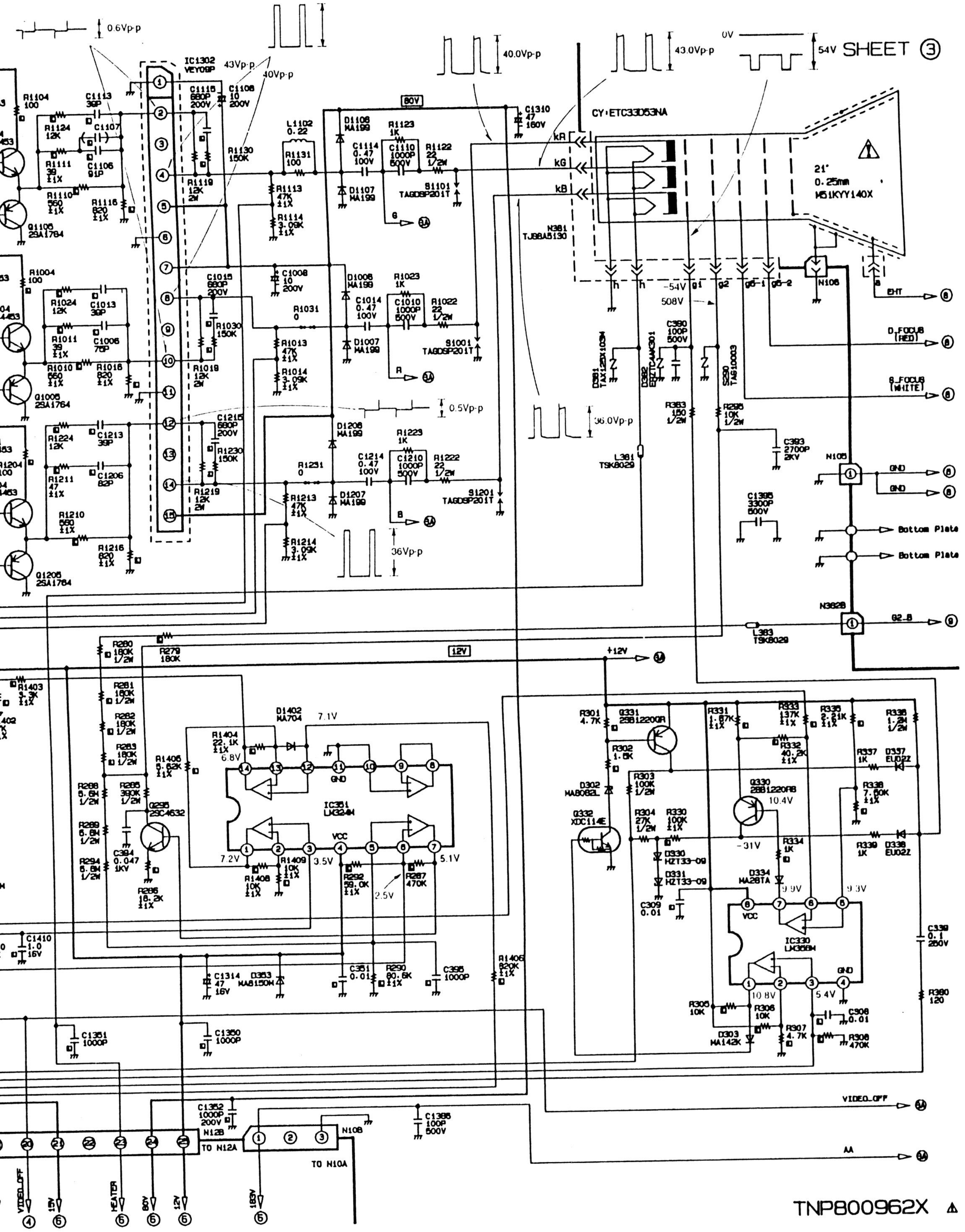
* : AT OSD ON

* : AT OSD ON



12V
IC1301 Vcc(+12V)
IC1301
M52326SP
G-Vcc
G-Out
G-In
G-gain G F/B
R-Vcc
R-Out
R-In
R-gain R F/B
B-Vcc
B-Out
B-In
B-gain B F/B
Contrast
Vcc
Clamp
Bright
IC1308
MM74HC4066M
VCC
GND
IC1303
LM324M
IC1306
MB88346BPF
VDD
AO10
AO9
AO8
AO7
AO6
AO5
AO4
AO3
VSS
AO11
AO12
DO
LD
CLK
DI
AO1
AO2
GND
Q1101 2SC4463
Q1104 2SC4463
Q1105 2SA1784
Q1001 2SC4463
Q1004 2SC4463
Q1201 2SC4463
Q1204 2SC4463
Q1304 XDC114E
D1101 DCC010
D1001 DCC010
D1201 DCC010
D1157 MA142K
D1158 MA142K
D1057 MA142K
D1058 MA142K
D1257 MA142K
D1258 MA142K
D1401 MA111
D1306 MA8056M
D1305 MA8056M
D1307 MA8056M
D1308
D1309
D1310
L1301 10
L1302 820
L1303 EXCELDR35
L1304 EXCELDR35
L1305 EXCELDR35
C1102 47 16V
C1103 0.01
C1104 0.01
C1105 1
C1130 22P
C1002 47 16V
C1003 0.01
C1004 0.01
C1005 1
C1030 22P
C1202 47 16V
C1203 0.01
C1204 0.01
C1205 1
C1230 22P
C1303 100 16V
C1304 1000 16V
C1305 0.47
C1307 10P
C1308 1.0 16V
C1301 10 50V
C1302 0.01
C1311 0.01
C1312 1.0 16V
C1320 22P
C1321 22P
C1322 22P
C1325 100 16V
C1109 0.01
C1009 0.01
C1209 0.01
C1410 1.0 16V
R1106 22
R1126 22.6K ±1%
R1127 10K ±1%
R1109 787 ±1%
R1006 22
R1026 22.6K ±1%
R1027 10K ±1%
R1009 787 ±1%
R1206 22
R1226 22.6K ±1%
R1227 10K ±1%
R1209 787 ±1%
R1314 330
R1306 1K
R1307 150
R1331 19.6K ±1%
R1332 10.0K
R1129 2.2K
R1128 768 ±1%
R1118 330
R1104 100
R1029 2.2K
R1028 768 ±1%
R1018 330
R1004 100
R1229 2.2K
R1228 768 ±1%
R1218 330
R1204 100
R1225 12K ±1%
R1125 12K ±1%
R1025 12K ±1%
R1120 10K ±1%
R1121 10K ±1%
R1021 10K ±1%
R1020 10K ±1%
R1320 2.7K ±1%
R1305 10K ±1%
R1308 10K ±1%
R1221 10K ±1%
R1220 10K ±1%
R1324 10K
R1325 22K
R1326 22K
R1291 6.98K ±1%
R293 11.3K ±1%
R1401 330
R1402 27K ±1%
R1403 1.3K ±1%
R1410 120K
2.0Vp-p
2.1Vp-p
0.7Vp-p
2.2Vp-p
5.1Vp-p
10.8Vp-p *
2.0Vp-p
2.3Vp-p
4.9V
2.1V
4.8V
2.2V
4.6V
2.4V
8.7V
4.1V
3.5V
5.2V
3.0V
3.5V
3.3V
2.5V
5.2V
1.1V
1.3V
1.5V
2.8V
3.6V
2.0V
110V
5.4V
7.1V
C
Bright
LB
LG
LR
② 12V
② GREEN
② RED
② BLUE
② CLAMP
② FBKG
② OSD_SW
② OSD_R
② OSD_G
② OSD_B
② O_G_G
② O_G_R
② O_G_B
② 5V_SENSE
② CLK
② DI
② H_PULSE
② LD_OSD
② BNC_SELECT
② V_PULSE
② VS
② 15V
② MODE_VS
② MODE_HS
② HS
G1_B ⑧
FOCUS ⑧
BLK ⑤
ABL ⑧
VS ④
V_PULSE ⑤
BNC_SELECT ④
LD_OSD ④
H_PULSE ⑦
LD_DAC1 ④
HS ④
CLK ④
MODE_HS ④
DI ④
MODE_VS ④
GND ④
GND ④
VIDEO_OFF ④

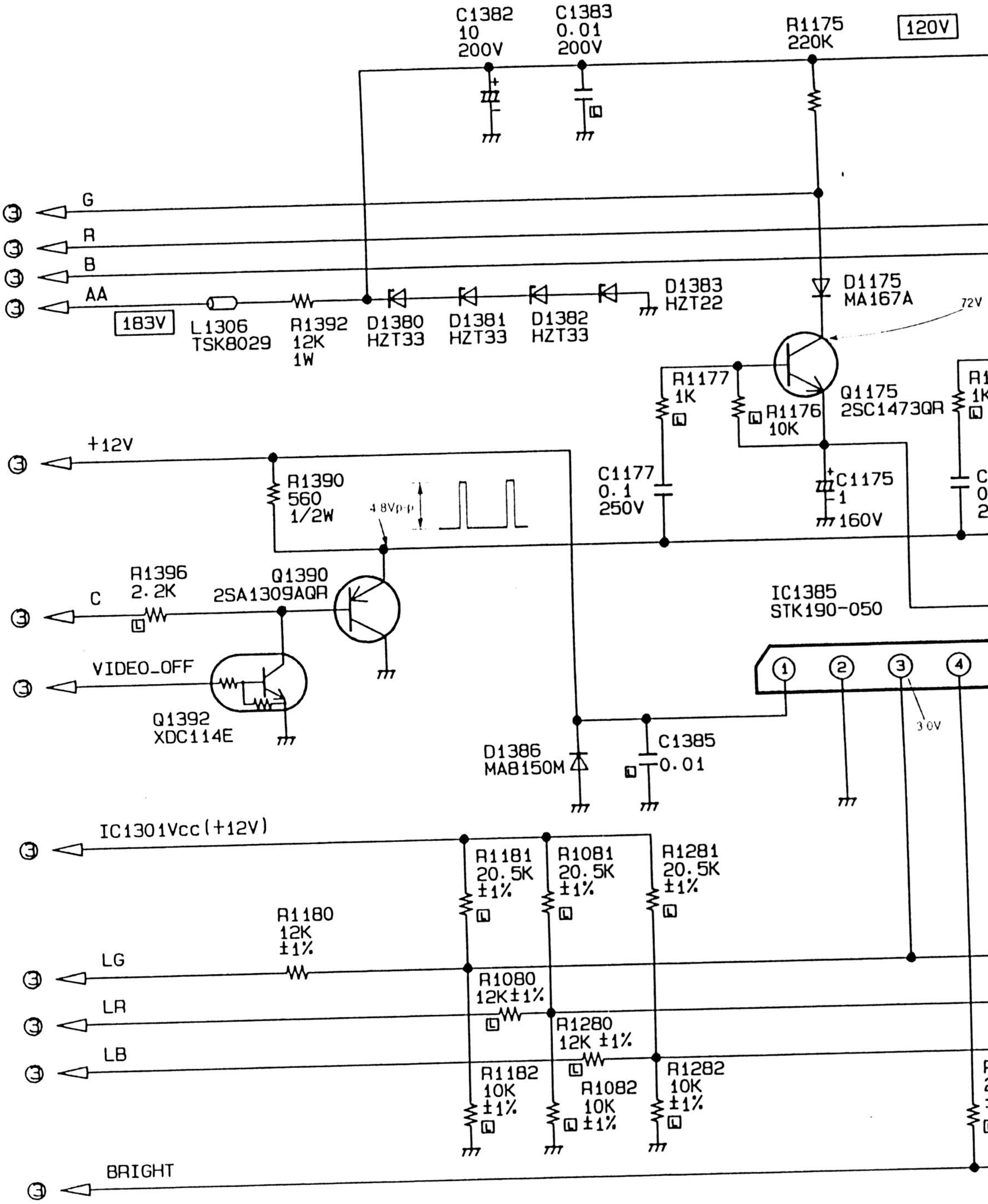
SHEET ③



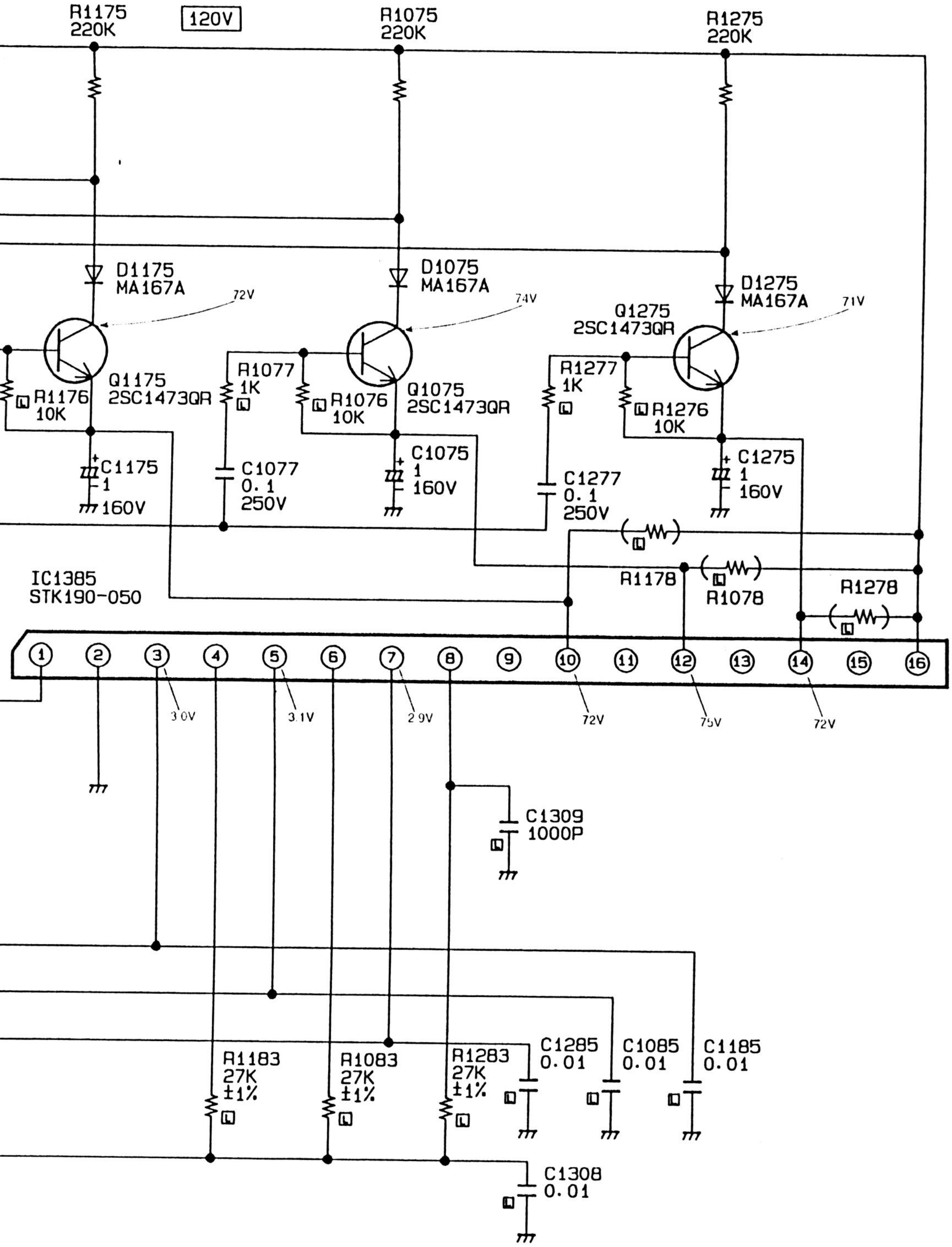
0.6Vp-p
43Vp-p
40Vp-p
40.0Vp-p
43.0Vp-p
0V
54V
IC1302
VEY08P
R1104
100
C1113
39P
C1115
680P
200V
C1108
10
200V
R1124
12K
C1107
R1111
39
±1%
C1106
91P
R1110
560
±1%
R1116
820
±1%
Q1105
2SA1764
R1130
150K
R1119
12K
2W
L1102
0.22
R1131
100
R1113
47K
±1%
R1114
3.09K
±1%
80V
D1106
MA199
D1107
MA199
R1123
1K
C1114
0.47
100V
C1110
1000P
500V
R1122
22
1/2W
S1101
TAGDSP201T
G
5A
C1310
47
160V
CY:ETC33D53NA
kR
kG
kB
21"
0.25mm
M51KYY140X
N381
TJB8A5130
R1004
100
C1015
680P
200V
C1008
10
200V
R1024
12K
C1013
39P
R1011
39
±1%
C1006
75P
R1010
560
±1%
R1016
820
±1%
Q1006
2SA1764
R1030
150K
R1019
12K
2W
R1031
0
R1013
47K
±1%
R1014
3.09K
±1%
D1006
MA199
D1007
MA199
R1023
1K
C1014
0.47
100V
C1010
1000P
500V
R1022
22
1/2W
S1001
TAGDSP201T
R
5A
h
h
-54V
508V
g1
g2
g5-1
g5-2
N106
EHT
8
D_FOCUS
(RED)
8
S_FOCUS
(WHITE)
8
C380
100P
500V
D381
TAX125Y103M
D382
ERZTCAWK301
S230
TAS10003
R383
150
1/2W
R295
10K
1/2W
C383
2700P
2KV
0.5Vp-p
36.0Vp-p
L381
TSK8029
N105
GND
8
GND
8
C1395
3300P
500V
Bottom Plate
Bottom Plate
R1204
100
C1215
680P
200V
R1224
12K
C1213
39P
R1211
47
±1%
C1206
82P
R1210
560
±1%
R1216
820
±1%
Q1205
2SA1764
R1230
150K
R1219
12K
2W
R1231
0
R1213
47K
±1%
R1214
3.09K
±1%
D1206
MA199
D1207
MA199
R1223
1K
C1214
0.47
100V
C1210
1000P
500V
R1222
22
1/2W
S1201
TAGDSP201T
B
5A
36Vp-p
N382B
G2_B
9
L383
TSK8029
R280
180K
1/2W
R279
180K
12V
+12V
5A
R1403
3.3K
±1%
R281
180K
1/2W
R282
180K
1/2W
R283
180K
1/2W
D1402
MA704
7.1V
R1404
22.1K
±1%
6.8V
R1405
5.62K
±1%
GND
IC351
LM324M
VCC
7.2V
3.5V
5.1V
2.5V
R1409
10K
±1%
R1408
10K
±1%
R292
59.0K
±1%
R287
470K
R288
5.6M
1/2W
R285
390K
1/2W
Q295
2SC4632
R289
5.6M
1/2W
R294
5.6M
1/2W
C384
0.047
1KV
R286
18.2K
±1%
C1410
1.0
16V
C1314
47
16V
D353
MA8150M
C351
0.01
R290
60.6K
±1%
C395
1000P
R1406
820K
±1%
C1351
1000P
C1350
1000P
C1352
1000P
200V
N12B
TO N12A
N108
TO N10A
C1398
100P
500V
VIDEO_OFF
15V
HEATER
80V
12V
183V
R301
4.7K
Q331
2SB1220QR
R302
1.5K
D302
MA8082L
Q332
XDC114E
R303
100K
1/2W
R304
27K
1/2W
R330
100K
±1%
D330
HZT33-09
D331
HZT33-09
C309
0.01
R331
1.87K
R333
137K
±1%
R335
2.21K
±1%
R336
1.2M
1/2W
R332
40.2K
±1%
Q330
2SB1220RB
10.4V
-31V
R334
1K
D334
MA28TA
9.9V
9.3V
R337
1K
D337
EU02Z
R338
7.50K
±1%
R339
1K
D338
EU02Z
IC330
LM358M
VCC
GND
10.8V
5.4V
R305
10K
R306
10K
R307
4.7K
D303
MA142K
C306
0.01
R308
470K
C339
0.1
250V
R380
120
VIDEO_OFF
5A
AA
5A
TNP800962X

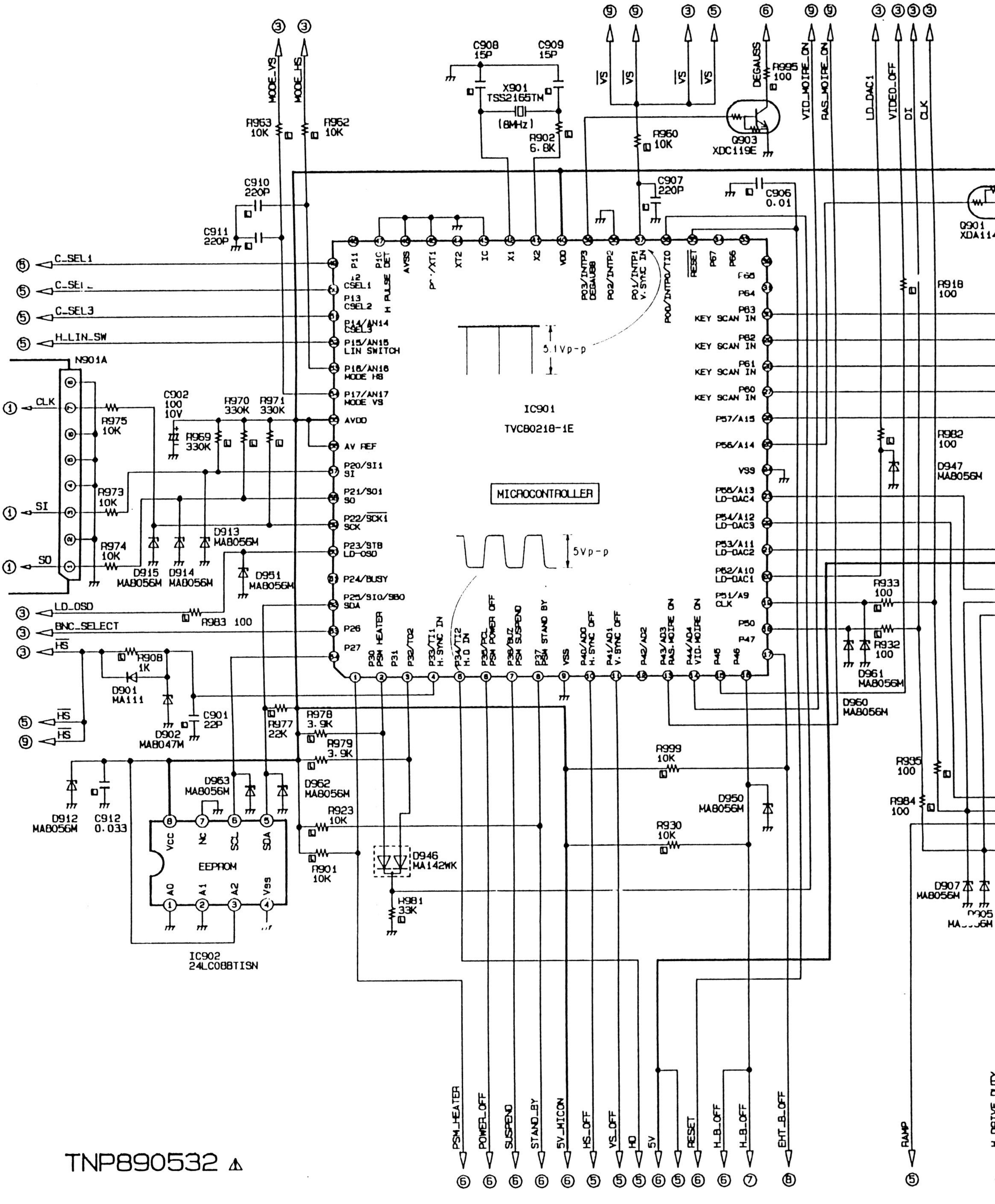
Important safety notice

ponents identified ⚠ by mark have special characteristics important for safety.
n replacing any of components. use only manufacturer's specified parts.


C1382
10
200V
C1383
0.01
200V
R1175
220K
120V
G
R
B
AA
183V
L1306
TSK8029
R1392
12K
1W
D1380
HZT33
D1381
HZT33
D1382
HZT33
D1383
HZT22
D1175
MA167A
72V
R1177
1K
R1176
10K
Q1175
2SC1473QR
C1177
0.1
250V
C1175
1
160V
+12V
R1390
560
1/2W
4.8Vp-p
R1396
2.2K
Q1390
2SA1309AQR
C
VIDEO_OFF
Q1392
XDC114E
IC1385
STK190-050
①
②
③
④
3.0V
D1386
MA8150M
C1385
0.01
IC1301Vcc(+12V)
R1181
20.5K
±1%
R1081
20.5K
±1%
R1281
20.5K
±1%
R1180
12K
±1%
LG
R1080
12K±1%
LR
R1280
12K ±1%
LB
R1182
10K
±1%
R1082
10K
±1%
R1282
10K
±1%
BRIGHT

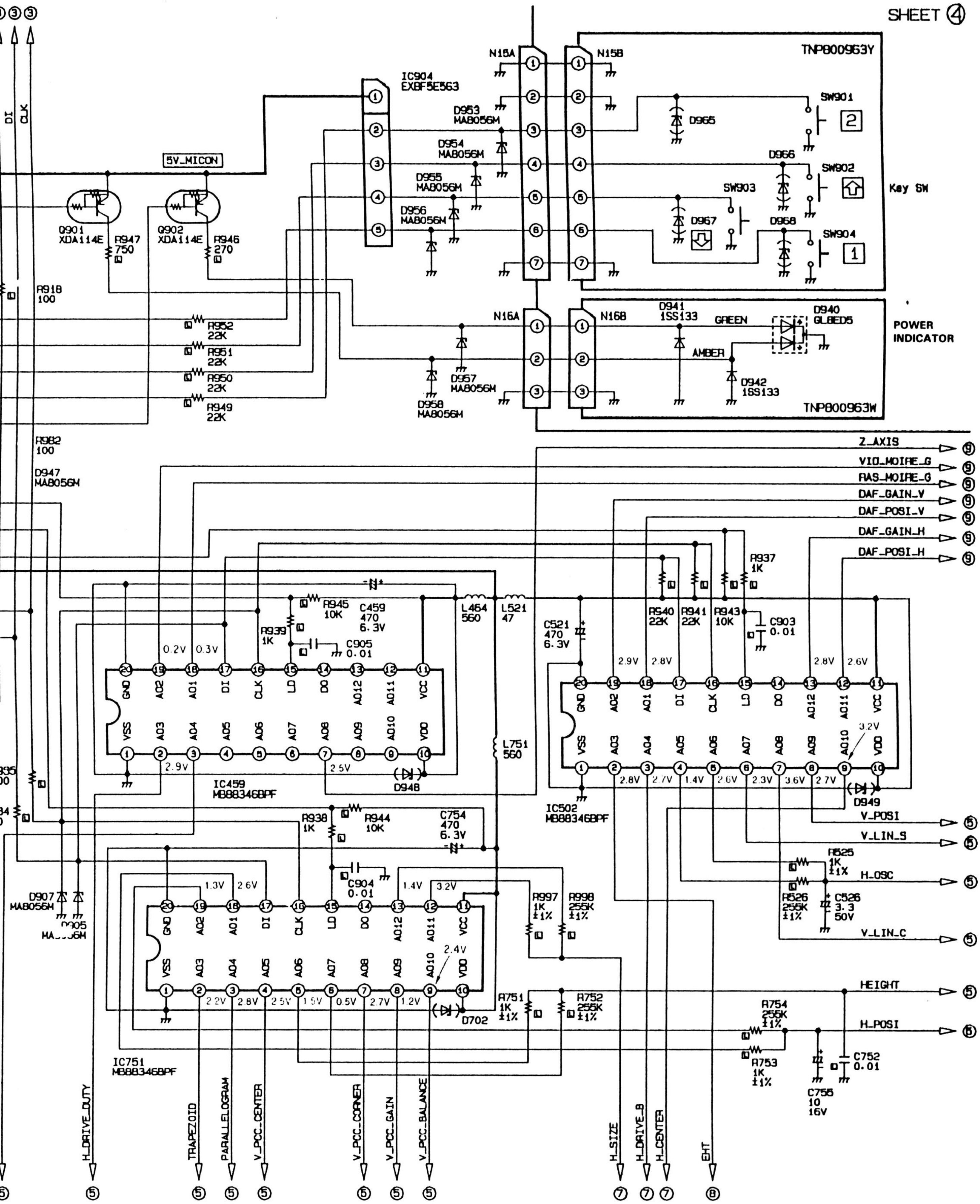
SHEET ③A

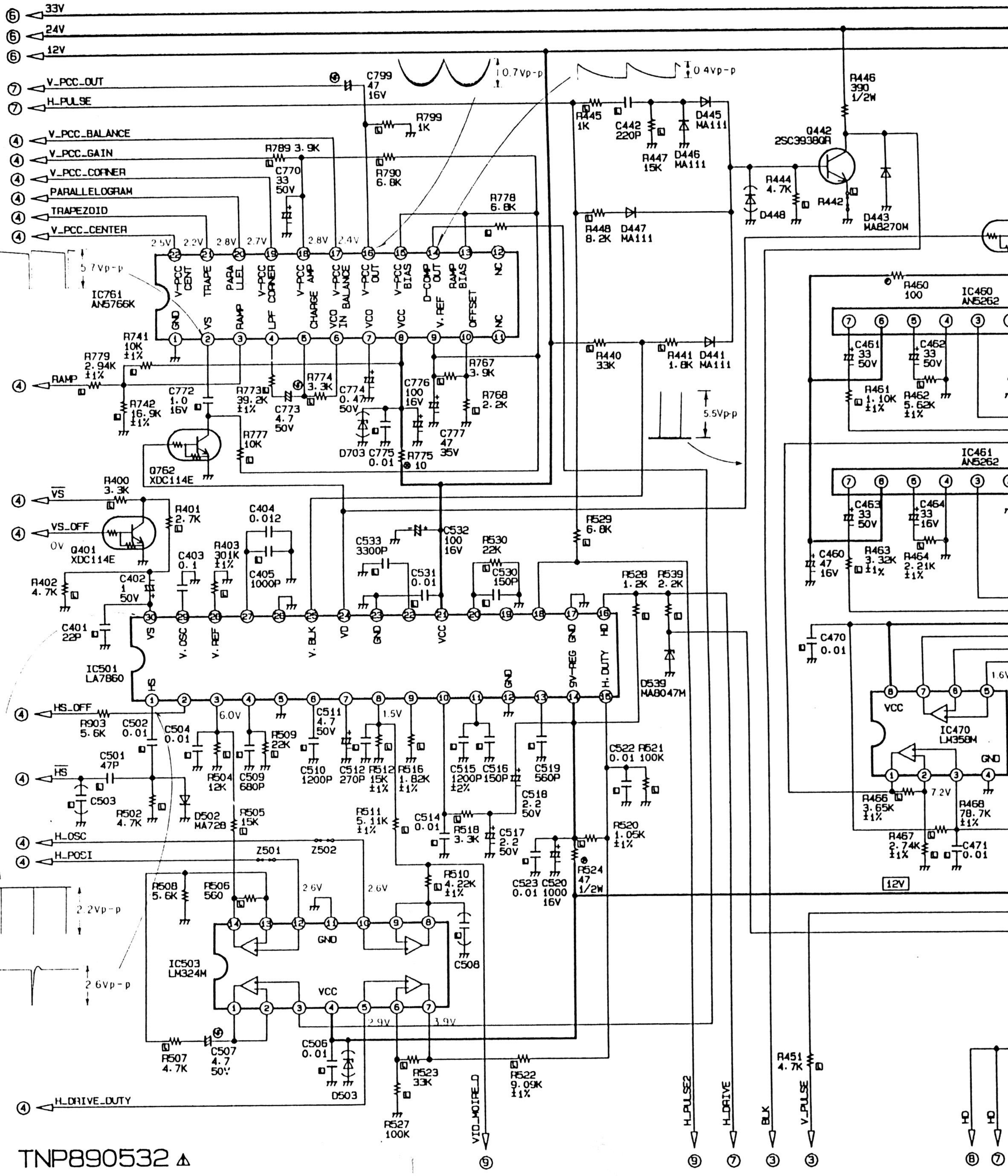

R1175
220K
120V
R1075
220K
R1275
220K
D1175
MA167A
72V
D1075
MA167A
74V
D1275
MA167A
71V
Q1275
2SC1473QR
Q1175
2SC1473QR
R1176
10K
R1077
1K
R1076
10K
Q1075
2SC1473QR
R1277
1K
R1276
10K
C1175
1
160V
C1077
0.1
250V
C1075
1
160V
C1277
0.1
250V
C1275
1
160V
R1178
R1078
R1278
IC1385
STK190-050
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
3.0V
3.1V
2.9V
72V
75V
72V
C1309
1000P
R1183
27K
±1%
R1083
27K
±1%
R1283
27K
±1%
C1285
0.01
C1085
0.01
C1185
0.01
C1308
0.01



MODE_VS
MODE_HS
R963 10K
R962 10K
C910 220P
C911 220P
C908 15P
C909 15P
X901 TSS2165TM
(8MHz)
R902 6.8K
VS
R960 10K
C907 220P
C906 0.01
DEGAUSS
R995 100
Q903 XDC119E
VID_MOIRE_ON
RAS_MOIRE_ON
LD_DAC1
VIDEO_OFF
DI
CLK
Q901 XDA114
C_SEL1
C_SEL2
C_SEL3
H_LIN_SW
N901A
CLK
SI
SO
R975 10K
R973 10K
R974 10K
C902 100 10V
R969 330K
R970 330K
R971 330K
D915 MA8056M
D914 MA8056M
D913 MA8056M
D951 MA8056M
LD_OSD
R983 100
BNC_SELECT
HS
R908 1K
D901 MA111
D902 MA8047M
C901 22P
P11
P10 H PULSE DET
AVSS
P07/XT1
XT2
IC
X1
X2
VDD
P03/INTP3 DEGAUSS
P02/INTP2
P01/INTP1 V.SYNC IN
P00/INTP0/TI0
RESET
P67
P66
P65
P64
P63 KEY SCAN IN
P62 KEY SCAN IN
P61 KEY SCAN IN
P60 KEY SCAN IN
P57/A15
P56/A14
VSS
P55/A13 LD-DAC4
P54/A12 LD-DAC3
P53/A11 LD-DAC2
P52/A10 LD-DAC1
P51/A9 CLK
P50
P47
P12 CSEL1
P13 CSEL2
P14/AN14 CSEL3
P15/AN15 LIN SWITCH
P16/AN16 MODE HS
P17/AN17 MODE VS
AVDD
AV REF
P20/SI1 SI
P21/SO1 SO
P22/SCK1 SCK
P23/STB LD-OSD
P24/BUSY
P25/SI0/SB0 SDA
P26
P27
P30 PSM HEATER
P31
P32/TO2
P33/TI1 H.SYNC IN
P34/TI2 H.D IN
P35/PCL PSM POWER OFF
P36/BUZ PSM SUSPEND
P37 PSM STAND BY
VSS
P40/AD0 H.SYNC OFF
P41/AD1 V.SYNC OFF
P42/AD2
P43/AD3 RAS.MOIRE ON
P44/AD4 VID.MOIRE ON
P45
P46
5.1Vp-p
5Vp-p
IC901
TVC80218-1E
MICROCONTROLLER
R918 100
R982 100
D947 MA8056M
R933 100
R932 100
D961 MA8056M
D960 MA8056M
R935 100
R984 100
D907 MA8056M
D905 MA8056M
R978 3.9K
R977 22K
R979 3.9K
D963 MA8056M
D962 MA8056M
R923 10K
R901 10K
D946 MA142WK
R981 33K
R999 10K
D950 MA8056M
R930 10K
D912 MA8056M
C912 0.033
VCC
NC
SCL
SDA
EEPROM
A0
A1
A2
Vss
IC902 24LC08BTISN
PSM_HEATER
POWER_OFF
SUSPEND
STAND_BY
5V_MICON
HS_OFF
VS_OFF
HD
5V
RESET
H_B_OFF
H_B_OFF
EHT_B_OFF
RAMP
H_DRIVE_DUTY

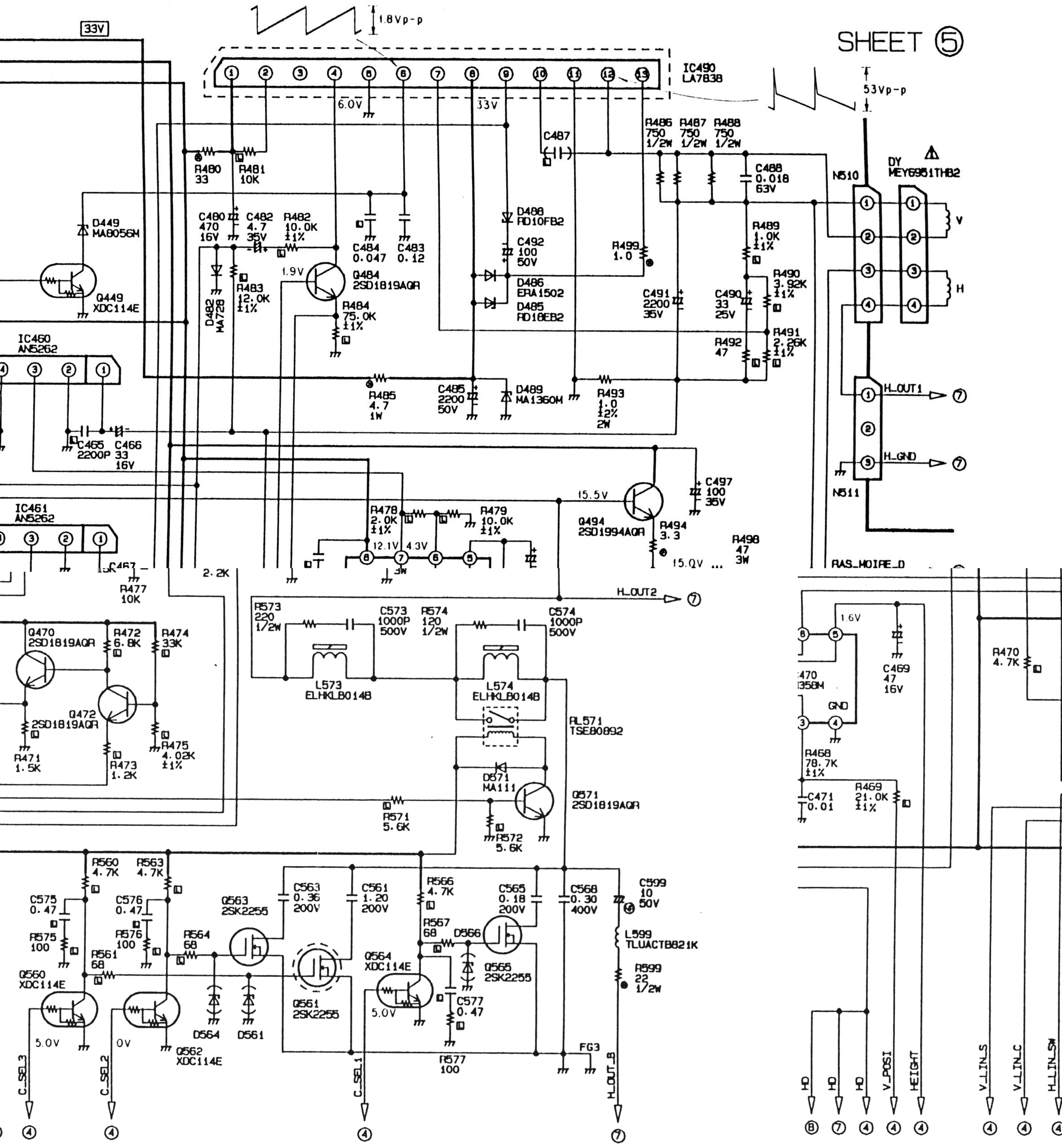
TNP890532 ⚠

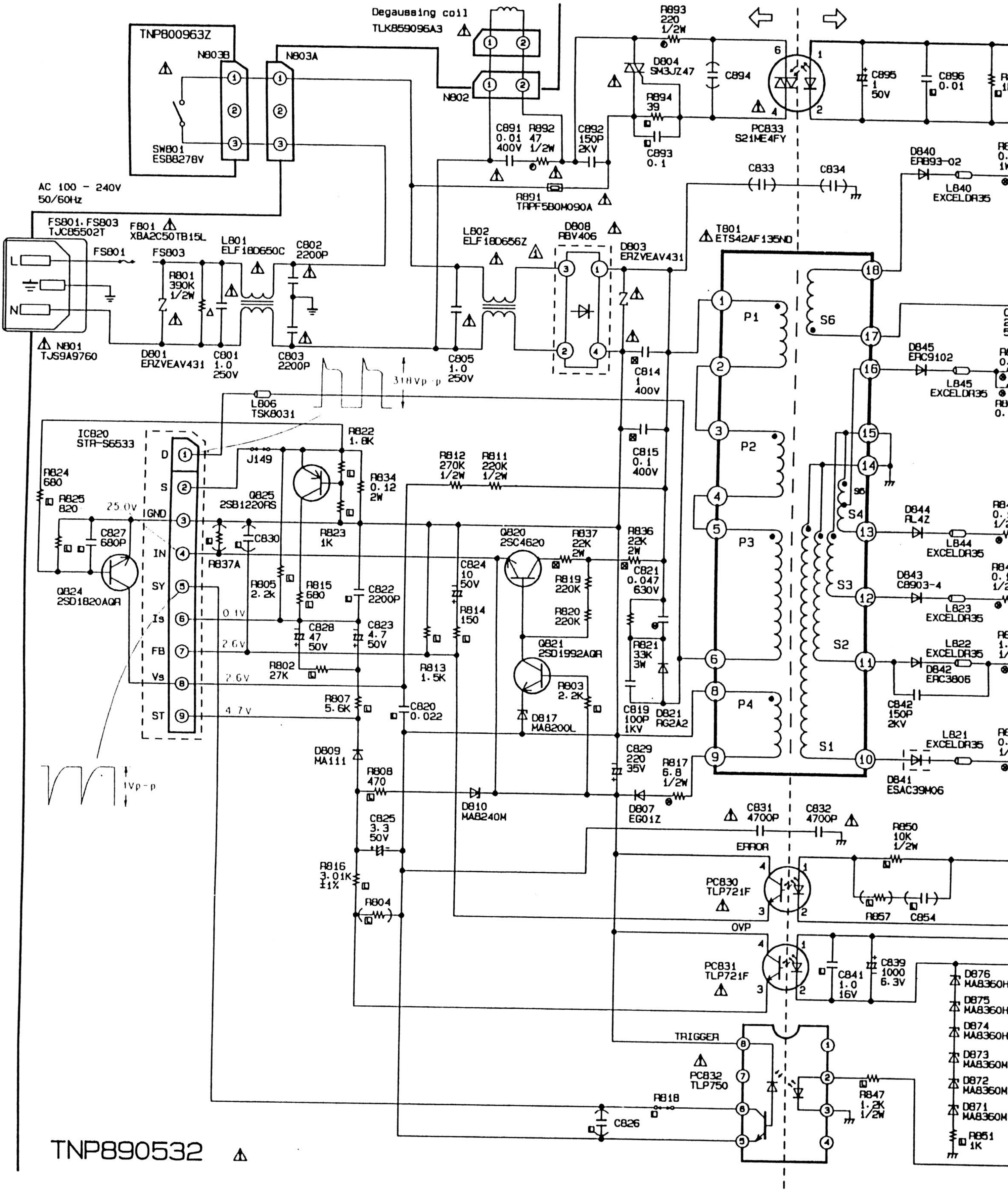

DI
CLK
5V_MICON
Q901
XDA114E
R947
750
Q902
XDA114E
R946
270
R918
100
R952
22K
R951
22K
R950
22K
R949
22K
R982
100
D947
MA8056M
IC904
EXBF5E563
D953
MA8056M
D954
MA8056M
D955
MA8056M
D956
MA8056M
N15A
N15B
TNP800963Y
D965
SW901
D966
SW902
SW903
D967
D968
SW904
Key SW
N16A
N16B
D941
1SS133
GREEN
AMBER
D940
GL8ED5
POWER INDICATOR
D957
MA8056M
D958
MA8056M
D942
1SS133
TNP800963W
Z_AXIS
VID_MOIRE_G
RAS_MOIRE_G
DAF_GAIN_V
DAF_POSI_V
DAF_GAIN_H
DAF_POSI_H
R937
1K
R945
10K
C459
470
6.3V
R939
1K
C905
0.01
L464
560
L521
47
C521
470
6.3V
R540
22K
R941
22K
R943
10K
C903
0.01
GND
AO2
AO1
DI
CLK
LD
DO
AO12
AO11
VCC
VSS
AO3
AO4
AO5
AO6
AO7
AO8
AO9
AO10
VDD
0.2V
0.3V
2.9V
2.5V
D948
IC459
MB88346BPF
L751
560
2.9V
2.8V
2.8V
2.6V
3.2V
2.8V
2.7V
1.4V
2.6V
2.3V
3.6V
2.7V
D949
IC502
MB88346BPF
V_POSI
V_LIN_S
R525
1K
±1%
H_OSC
R526
255K
±1%
C526
3.3
50V
V_LIN_C
R938
1K
R944
10K
C754
470
6.3V
C904
0.01
1.3V
2.6V
1.4V
3.2V
2.4V
R997
1K
±1%
R998
255K
±1%
2.2V
2.8V
2.5V
1.5V
0.5V
2.7V
1.2V
D702
R751
1K
±1%
R752
255K
±1%
HEIGHT
R754
255K
±1%
H_POSI
R753
1K
±1%
C752
0.01
C755
10
16V
D907
MA8056M
D905
IC751
MB88346BPF
H_DRIVE_DUTY
TRAPEZOID
PARALLELOGRAM
V_PCC_CENTER
V_PCC_CORNER
V_PCC_GAIN
V_PCC_BALANCE
H_SIZE
H_DRIVE_B
H_CENTER
EHT
⑤
⑦
⑧
⑨
③


⑥ 33V
⑥ 24V
⑥ 12V
⑦ V_PCC_OUT
⑦ H_PULSE
④ V_PCC_BALANCE
④ V_PCC_GAIN
④ V_PCC_CORNER
④ PARALLELOGRAM
④ TRAPEZOID
④ V_PCC_CENTER
④ RAMP
④ VS
④ VS_OFF
0V
④ HS_OFF
④ HS
④ H_OSC
④ H_POSI
④ H_DRIVE_DUTY
C799 47 16V
0.7Vp-p
0.4Vp-p
R799 1K
R789 3.9K
C770 33 50V
R790 6.8K
R778 6.8K
IC761 AN5766K
V-PCC CENT
TRAPE
PARA LLEL
V-PCC CORNER
V-PCC AMP
V-PCC IN BALANCE
V-PCC OUT
V-PCC BIAS
D-COMP OUT
RAMP BIAS
NC
GND
VS
RAMP
LPF
CHARGE AMP
VCO IN
VCO
VCC
V.REF
OFFSET
2.5V 2.2V 2.8V 2.7V 2.8V 2.4V
5.7Vp-p
R741 10K ±1%
R779 2.94K ±1%
R742 16.9K ±1%
C772 1.0 16V
R773 39.2K ±1%
C773 4.7 50V
R774 3.3K
C774 0.47 50V
C776 100 16V
R767 3.9K
R768 2.2K
C777 47 35V
D703
C775 0.01
R775 10
R777 10K
Q762 XDC114E
R445 1K
C442 220P
D445 MA111
R447 15K
D446 MA111
R448 8.2K
D447 MA111
R440 33K
R441 1.8K
D441 MA111
5.5Vp-p
R446 390 1/2W
Q442 2SC3938QR
R444 4.7K
R442
D448
D443 MA8270M
R460 100
IC460 AN5262
C461 33 50V
C462 33 50V
R461 1.10K ±1%
R462 5.62K ±1%
IC461 AN5262
C463 33 50V
C464 33 16V
C460 47 16V
R463 3.32K ±1%
R464 2.21K ±1%
C470 0.01
IC470 LM358M
VCC
GND
1.6V
7.2V
R466 3.65K ±1%
R468 78.7K ±1%
R467 2.74K ±1%
C471 0.01
12V
R400 3.3K
R401 2.7K
Q401 XDC114E
R402 4.7K
C402 1 50V
C401 22P
C403 0.1
C404 0.012
C405 1000P
R403 301K ±1%
C533 3300P
C532 100 16V
C531 0.01
R530 22K
C530 150P
R529 6.8K
R528 1.2K
R539 2.2K
D539 MA8047M
IC501 LA7860
VS
V.OSC
V.REF
V.BLK
VD
GND
VCC
GND
HD
HS
GND
9V-REG
H.DUTY
6.0V
1.5V
R903 5.6K
C502 0.01
C504 0.01
C501 47P
C503
R502 4.7K
D502 MA728
R504 12K
C509 680P
R509 22K
R505 15K
C510 1200P
C511 4.7 50V
C512 270P
R512 15K ±1%
R516 1.82K ±1%
C515 1200P ±2%
C516 150P
C519 560P
C518 2.2 50V
C522 0.01
R521 100K
R511 5.11K ±1%
C514 0.01
R518 3.3K
C517 2.2 50V
C523 0.01
C520 1000 16V
R520 1.05K ±1%
R524 47 1/2W
Z501
Z502
2.2Vp-p
2.6Vp-p
R508 5.6K
R506 560
2.6V
2.6V
IC503 LM324M
GND
VCC
R510 4.22K ±1%
C508
2.9V
3.9V
R507 4.7K
C507 4.7 50V
C506 0.01
D503
R523 33K
R522 9.09K ±1%
R527 100K
R451 4.7K
VID_MOIRE_D ⑨
H_PULSE2 ⑨
H_DRIVE ⑦
BLK ③
V_PULSE ③
HD ⑧
HD ⑦

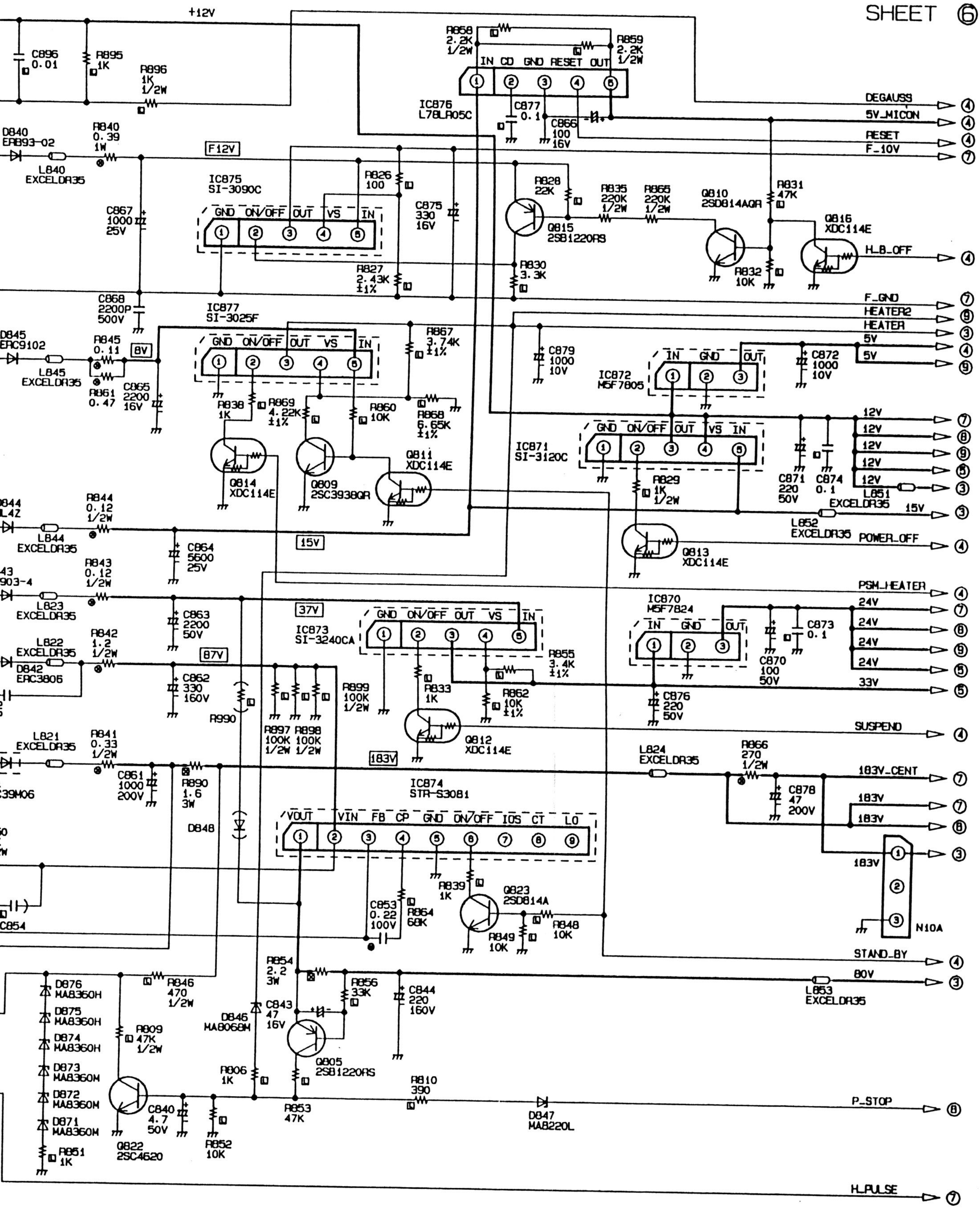
TNP890532 ⚠

SHEET ⑤

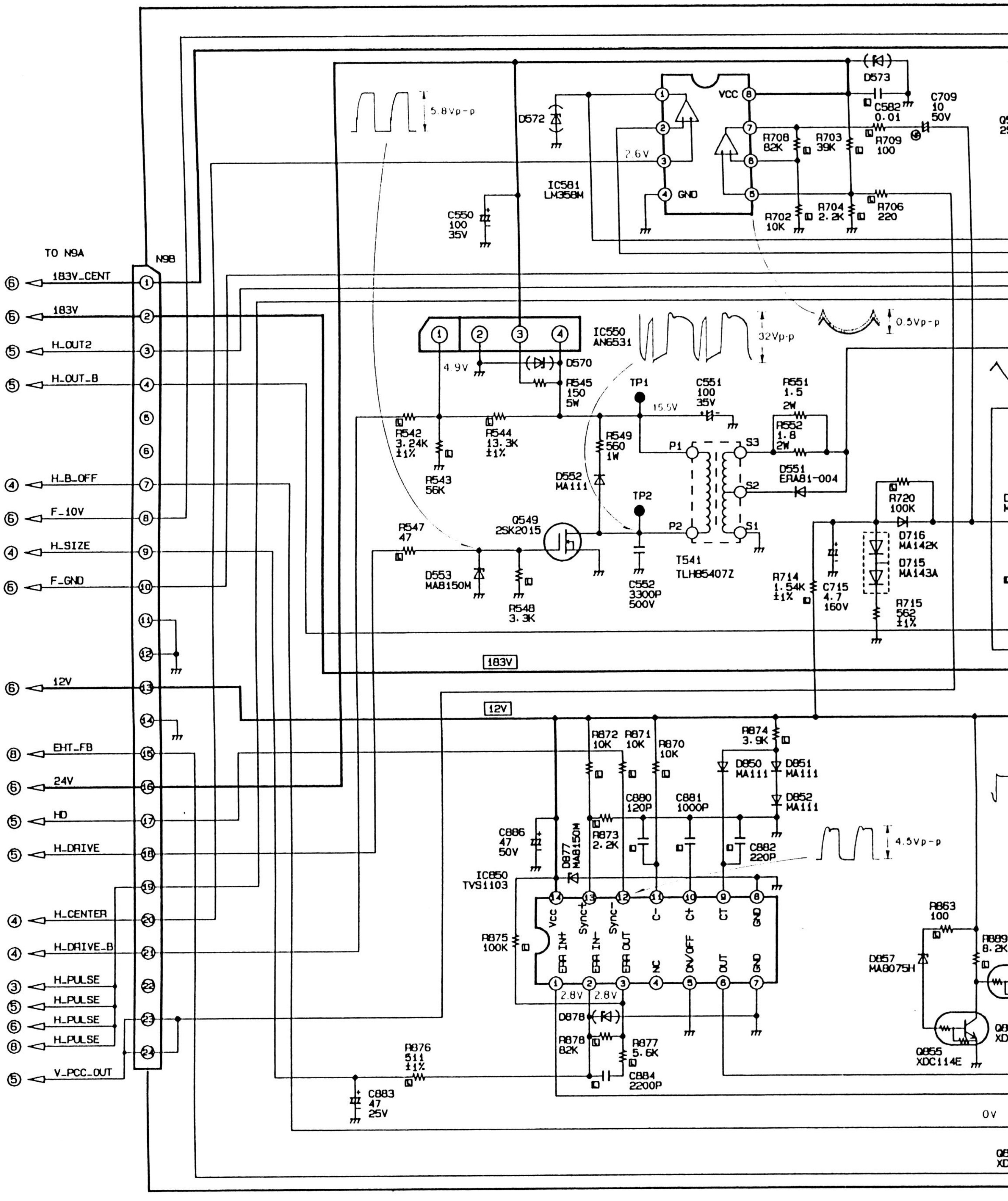

33V
1.8Vp-p
IC490
LA7838
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬
6.0V
33V
53Vp-p
R480
33
R481
10K
C487
R486 R487 R488
750 750 750
1/2W 1/2W 1/2W
C488
0.018
63V
DY
MEY6981THB2
N510
V
H
D449
MA8056M
Q449
XDC114E
C480
470
16V
C482
4.7
35V
R482
10.0K
±1%
C484
0.047
C483
0.12
D488
RD10FB2
C492
100
50V
R499
1.0
R489
1.0K
±1%
1.9V
Q484
2SD1819AQR
D486
ERA1502
D485
RD18EB2
R490
3.92K
±1%
C491
2200
35V
C490
33
25V
D482
MA728
R483
12.0K
±1%
R484
75.0K
±1%
R491
2.26K
±1%
R492
47
IC460
AN5262
③ ② ①
R485
4.7
1W
C485
2200
50V
D489
MA1360M
R493
1.0
±2%
2W
N511
H_OUT1
H_GND
⑦
C465
2200P
C466
33
16V
C497
100
35V
15.5V
IC461
AN5262
③ ② ①
R478
2.0K
±1%
R479
10.0K
±1%
Q494
2SD1994AQR
R494
3.3
R498
47
3W
12.1V
4.3V
⑧ ⑦ ⑥ ⑤
15.0V
C467
R477
10K
2.2K
RAS_MOIRE_D
H_OUT2
R573
220
1/2W
C573
1000P
500V
R574
120
1/2W
C574
1000P
500V
L573
ELHKLB014B
L574
ELHKLB014B
RL571
TSE80892
Q470
2SD1819AQR
R472
6.8K
R474
33K
Q472
2SD1819AQR
R471
1.5K
R473
1.2K
R475
4.02K
±1%
D571
MA111
Q571
2SD1819AQR
R571
5.6K
R572
5.6K
1.6V
C469
47
16V
470
358M
GND
R468
78.7K
±1%
C471
0.01
R469
21.0K
±1%
R470
4.7K
R560
4.7K
R563
4.7K
C575
0.47
C576
0.47
R575
100
R576
100
Q563
2SK2255
C563
0.36
200V
C561
1.20
200V
R566
4.7K
C565
0.18
200V
C568
0.30
400V
C599
10
50V
R564
68
R561
68
R567
68
D566
Q564
XDC114E
Q565
2SK2255
L599
TLUACTB821K
R599
22
1/2W
Q560
XDC114E
Q561
2SK2255
C577
0.47
D564
D561
5.0V
0V
5.0V
Q562
XDC114E
R577
100
FG3
C_SEL3
C_SEL2
C_SEL1
H_OUT_B
④ ④ ④ ⑦
HD HD HD V_POSI HEIGHT
⑧ ⑦ ④ ④ ④
V_LIN_S V_LIN_C H_LIN_SW
④ ④ ④


TNP800963Z
N803B
N803A
SW801
ESB8278V
Degaussing coil
TLK859096A3
N802
C891 0.01 400V
R892 47 1/2W
C892 150P 2KV
R893 220 1/2W
D804 SM3JZ47
C894
R894 39
C893 0.1
PC833 S21ME4FY
C895 1 50V
C896 0.01
D840 ERB93-02
L840 EXCELDR35
C833
C834
R891 TRPF5B0M090A
AC 100 - 240V 50/60Hz
FS801, FS803 TJC85502T
FB01 XBA2C50TB15L
FS801
FS803
R801 390K 1/2W
L801 ELF18D650C
C802 2200P
L802 ELF18D656Z
D808 RBV406
D803 ERZVEAV431
T801 ETS42AF135ND
N801 TJS9A9760
D801 ERZVEAV431
C801 1.0 250V
C803 2200P
C805 1.0 250V
318Vp-p
C814 1 400V
L806 TSK8031
IC820 STR-S6533
R822 1.8K
R824 680
R825 820
25.0V
J149
Q825 2SB1220RS
R834 0.12 2W
R812 270K 1/2W
R811 220K 1/2W
C815 0.1 400V
C827 680P
R837A
C830
R823 1K
Q820 2SC4620
R837 22K 2W
R836 22K 2W
C821 0.047 630V
Q824 2SD1820AQR
R805 2.2K
R815 680
C822 2200P
C824 10 50V
R819 220K
R820 220K
R814 150
0.1V
C828 47 50V
C823 4.7 50V
2.6V
2.6V
4.7V
R802 27K
R813 1.5K
Q821 2SD1992AQR
R821 33K 3W
R807 5.6K
C820 0.022
R803 2.2K
D817 MA8200L
C819 100P 1KV
D821 RG2A2
D809 MA111
R808 470
D810 MA8240M
C829 220 35V
R817 6.8 1/2W
D807 EG01Z
1Vp-p
C825 3.3 50V
R816 3.01K ±1%
R804
D
S
IGND
IN
SY
Is
FB
Vs
ST
P1
P2
P3
P4
S1
S2
S3
S4
S5
S6
D845 ERC9102
L845 EXCELDR35
D844 RL4Z
L844 EXCELDR35
D843 C8903-4
L823 EXCELDR35
L822 EXCELDR35
D842 ERC3806
C842 150P 2KV
L821 EXCELDR35
D841 ESAC39M06
C831 4700P
C832 4700P
ERROR
R850 10K 1/2W
PC830 TLP721F
R857
C854
OVP
PC831 TLP721F
C841 1.0 16V
C839 1000 6.3V
D876 MA8360H
D875 MA8360H
D874 MA8360H
D873 MA8360M
D872 MA8360M
D871 MA8360M
R851 1K
TRIGGER
PC832 TLP750
R818
C826
R847 1.2K 1/2W
TNP890532

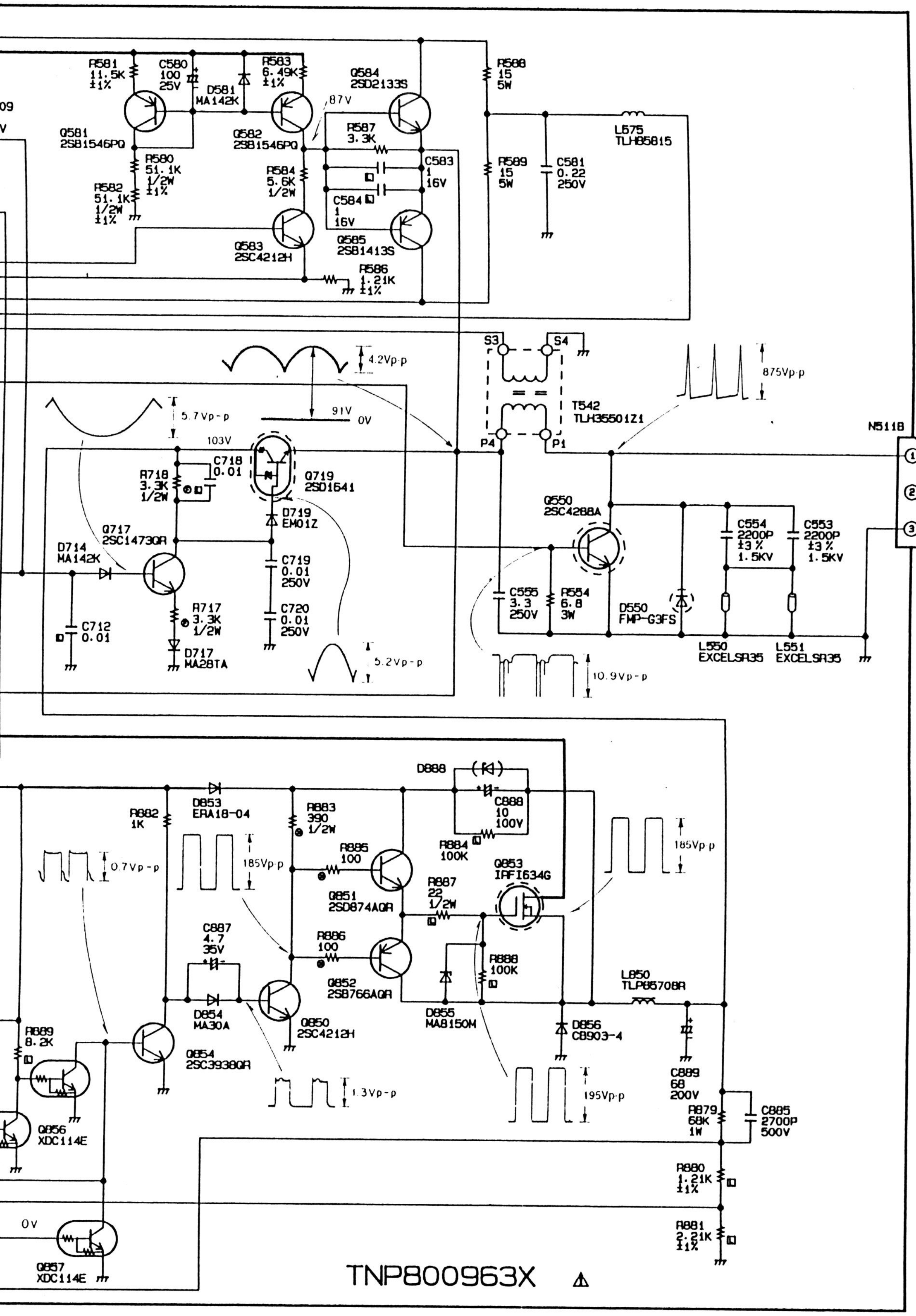
SHEET ⑥



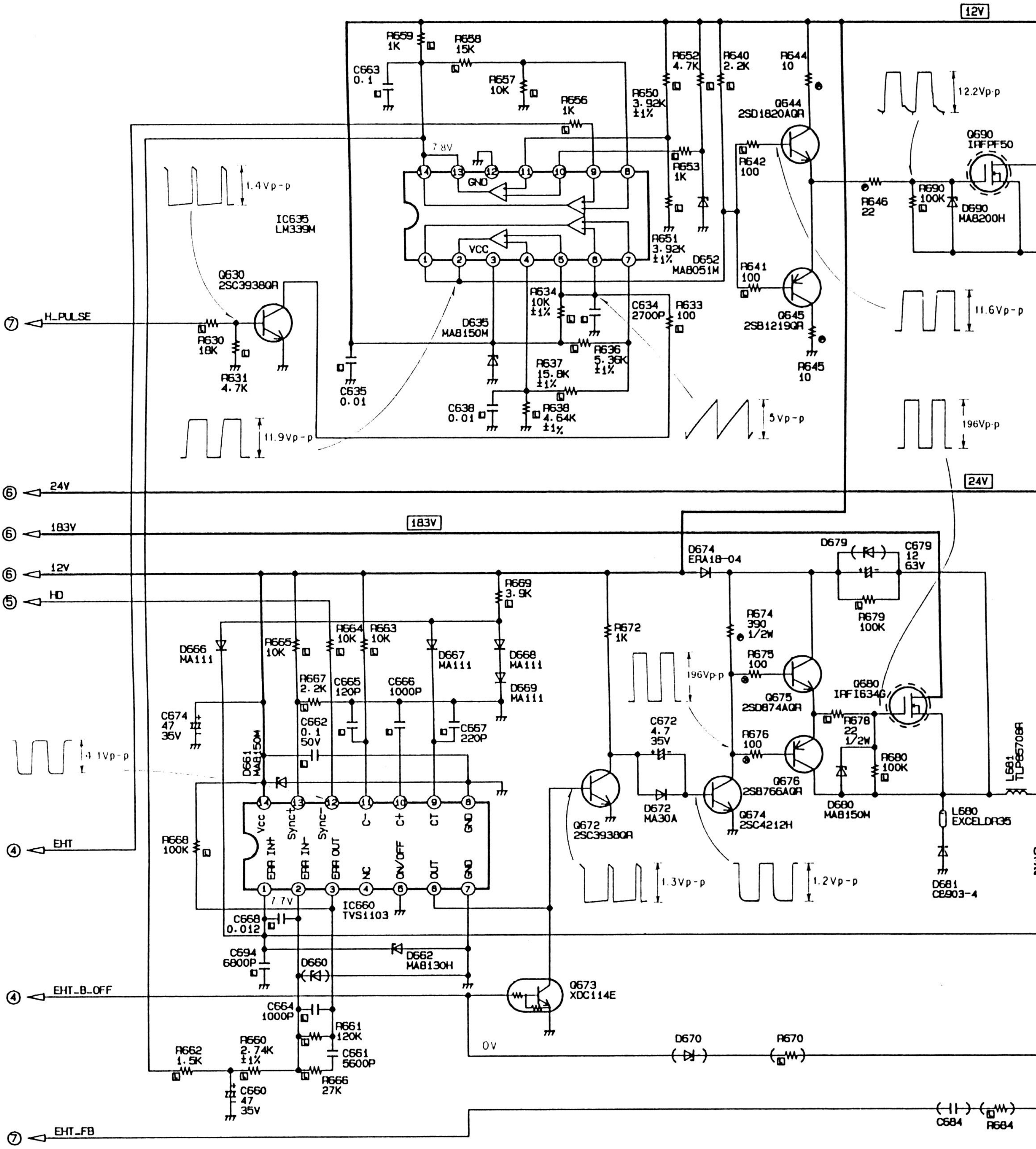
+12V
C896 0.01
R895 1K
R896 1K 1/2W
D840 ERB93-02
R840 0.39 1W
L840 EXCELDR35
F12V
IC875 SI-3090C
GND ON/OFF OUT VS IN
C867 1000 25V
R826 100
C875 330 16V
R827 2.43K ±1%
C868 2200P 500V
IC877 SI-3025F
D845 ERC9102
R845 0.11
8V
L845 EXCELDR35
R861 0.47
C865 2200 16V
R867 3.74K ±1%
R838 1K
R869 4.22K ±1%
R860 10K
R868 6.65K ±1%
Q814 XDC114E
Q809 2SC3938QR
Q811 XDC114E
R858 2.2K 1/2W
R859 2.2K 1/2W
IN CD GND RESET OUT
IC876 L78LR05C
C877 0.1
C866 100 16V
R828 22K
Q815 2SB1220RS
R835 220K 1/2W
R865 220K 1/2W
Q810 2SD814AQR
R831 47K
Q816 XDC114E
R832 10K
R830 3.3K
DEGAUSS ④
5V_MICON ④
RESET ④
F_10V ⑦
H_B_OFF ④
F_GND ⑦
HEATER2 ⑨
HEATER ③
5V ④
5V ⑨
C879 1000 10V
IC872 M5F7805
C872 1000 10V
IC871 SI-3120C
R829 1K 1/2W
Q813 XDC114E
C871 220 50V
C874 0.1
12V ⑦
12V ⑧
12V ⑨
12V ⑤
12V ③
L851 EXCELDR35
15V ③
L852 EXCELDR35
POWER_OFF ④
D844 L4Z
R844 0.12 1/2W
L844 EXCELDR35
C864 5600 25V
15V
R843 0.12 1/2W
903-4
L823 EXCELDR35
C863 2200 50V
37V
IC873 SI-3240CA
L822 EXCELDR35
R842 1.2 1/2W
D842 ERC3806
87V
C862 330 160V
R990
R897 100K 1/2W
R898 100K 1/2W
R899 100K 1/2W
R833 1K
R862 10K ±1%
R855 3.4K ±1%
Q812 XDC114E
IC870 M5F7824
C873 0.1
C870 100 50V
C876 220 50V
PSM_HEATER ④
24V ⑦
24V ⑧
24V ⑨
24V ⑤
33V ⑤
SUSPEND ④
L821 EXCELDR35
R841 0.33 1/2W
C861 1000 200V
R890 1.6 3W
39M06
183V
IC874 STR-S3081
VOUT VIN FB CP GND ON/OFF IOS CT LO
D848
L824 EXCELDR35
R866 270 1/2W
C878 47 200V
183V_CENT ⑦
183V ⑦
183V ⑧
183V ③
N10A
C854
C853 0.22 100V
R864 68K
R839 1K
Q823 2SD814A
R849 10K
R848 10K
STAND_BY ④
R854 2.2 3W
R856 33K
C844 220 160V
80V ③
L853 EXCELDR35
D876 MA8360H
D875 MA8360H
D874 MA8360H
D873 MA8360M
D872 MA8360M
D871 MA8360M
R851 1K
R846 470 1/2W
R809 47K 1/2W
D846 MA8068M
C843 47 16V
Q805 2SB1220RS
R806 1K
R853 47K
R810 390
D847 MA8220L
P_STOP ⑧
C840 4.7 50V
R852 10K
Q822 2SC4620
H_PULSE ⑦


TO N9A
N9B
⑥ 183V_CENT ①
⑥ 183V ②
⑤ H_OUT2 ③
⑤ H_OUT_B ④
⑤
⑥
④ H_B_OFF ⑦
⑥ F_10V ⑧
④ H_SIZE ⑨
⑥ F_GND ⑩
⑪
⑫
⑥ 12V ⑬
⑭
⑧ EHT_FB ⑮
⑥ 24V ⑯
⑤ HD ⑰
⑤ H_DRIVE ⑱
⑲
④ H_CENTER ⑳
④ H_DRIVE_B ㉑
③ H_PULSE
⑤ H_PULSE
⑥ H_PULSE
⑧ H_PULSE
㉒
㉓
⑤ V_PCC_OUT ㉔
5.8Vp-p
D572
D573
C582 0.01
C709 10 50V
VCC
IC581 LM358M
GND
2.6V
R708 82K
R703 39K
R709 100
R702 10K
R704 2.2K
R706 220
C550 100 35V
IC550 AN6531
32Vp-p
0.5Vp-p
4.9V
D570
R545 150 5W
TP1
15.5V
C551 100 35V
R551 1.5 2W
R552 1.8 2W
R542 3.24K ±1%
R544 13.3K ±1%
R549 560 1W
P1
S3
S2
S1
P2
D551 ERA81-004
R543 56K
D552 MA111
TP2
R720 100K
Q549 2SK2015
R547 47
D716 MA142K
D715 MA143A
D553 MA8150M
R548 3.3K
C552 3300P 500V
T541 TLH85407Z
R714 1.54K ±1%
C715 4.7 160V
R715 562 ±1%
183V
12V
R872 10K
R871 10K
R870 10K
R874 3.9K
D850 MA111
D851 MA111
D852 MA111
C880 120P
C881 1000P
C886 47 50V
R873 2.2K
D877 MA8150M
C882 220P
4.5Vp-p
IC850 TVS1103
Vcc
Sync+
Sync-
C-
C+
CT
GND
ERR IN+
ERR IN-
ERR OUT
NC
ON/OFF
OUT
GND
R875 100K
2.8V
2.8V
D878
R878 82K
R877 5.6K
C884 2200P
R876 511 ±1%
C883 47 25V
R863 100
R889 8.2K
D857 MA8075H
Q855 XDC114E
0V

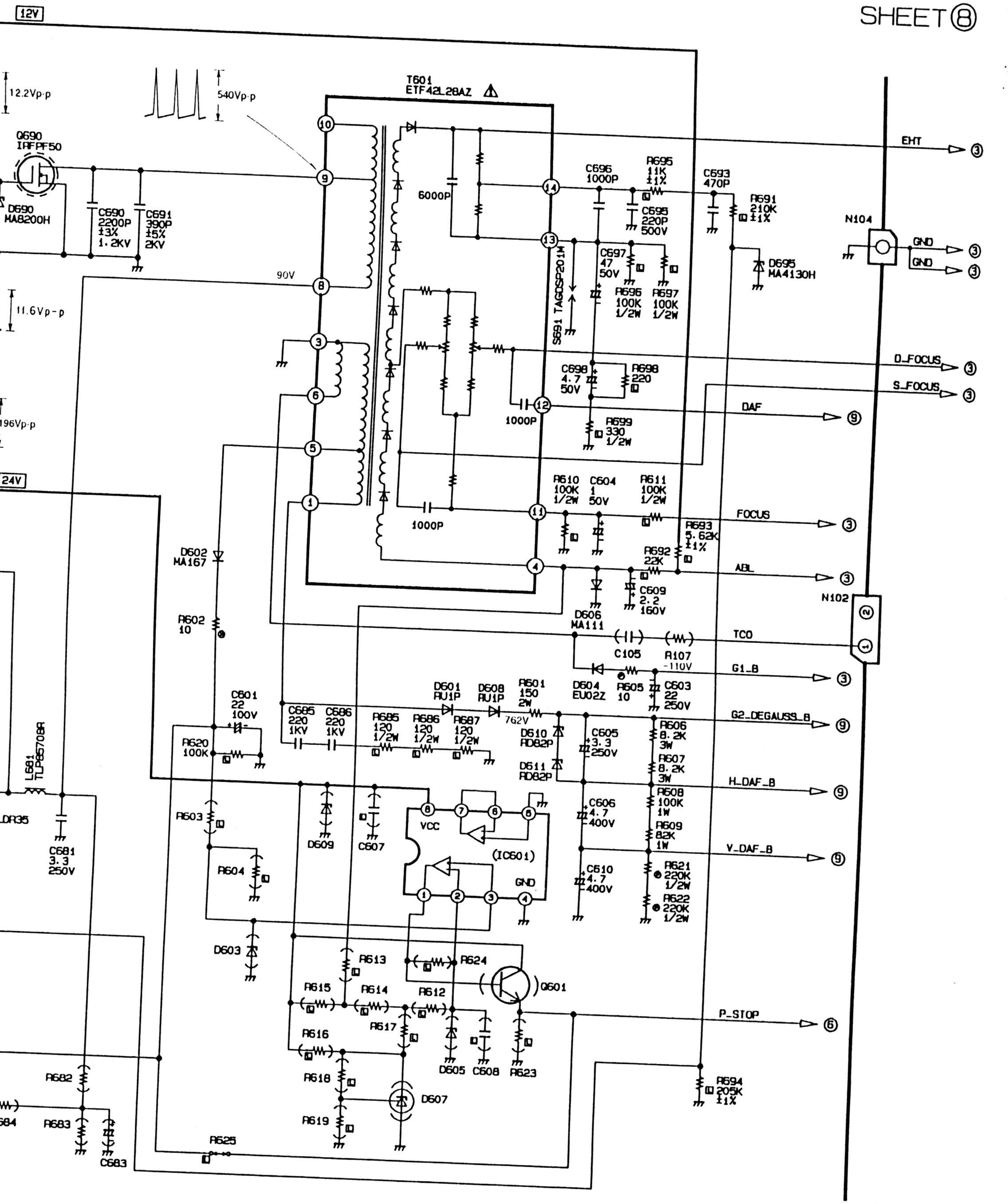
SHEET ⑦

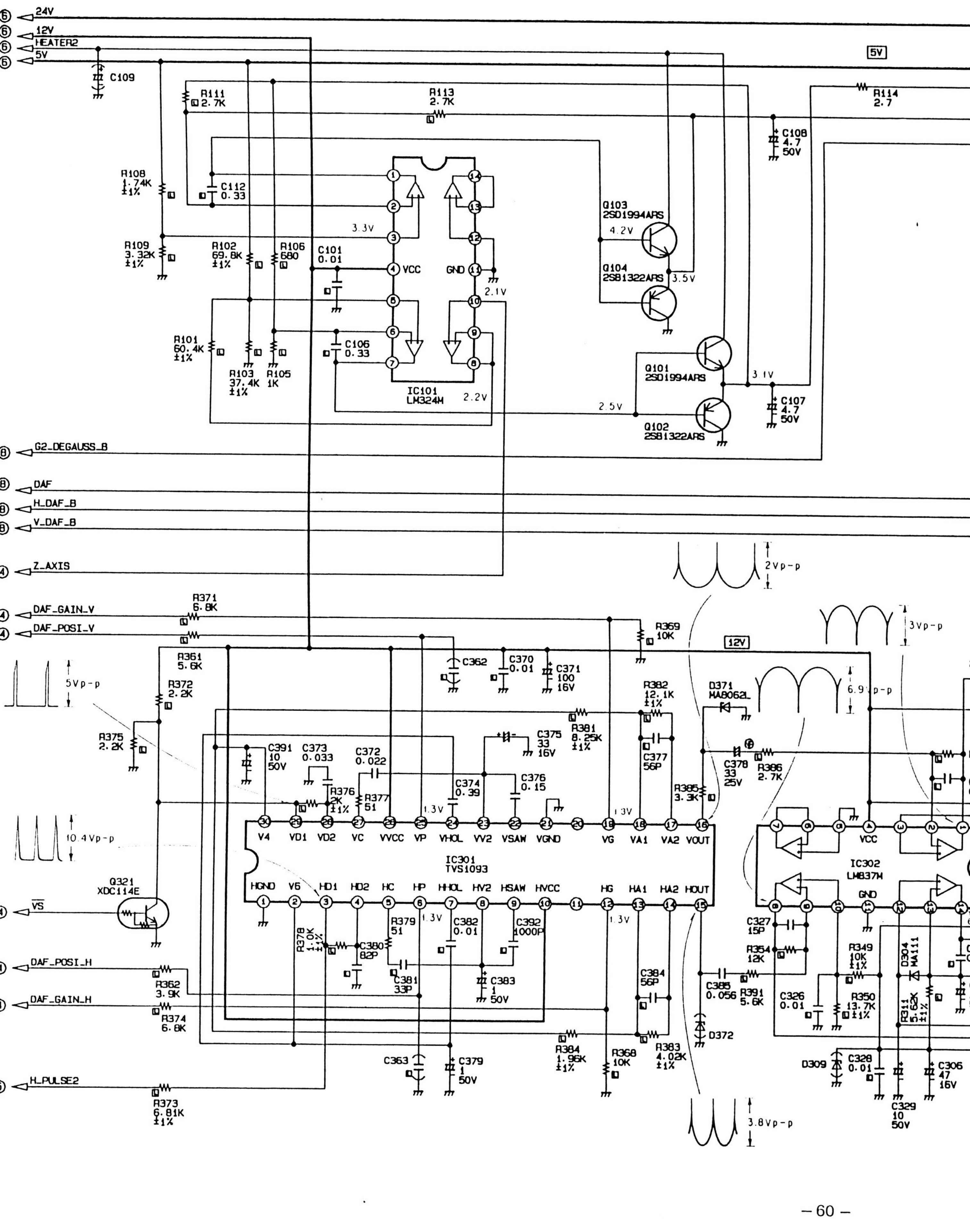


R581 11.5K ±1%
C580 100 25V
R583 6.49K ±1%
D581 MA142K
Q581 2SB1546PQ
Q582 2SB1546PQ
87V
Q584 2SD2133S
R588 15 5W
R587 3.3K
R580 51.1K 1/2W ±1%
R582 51.1K 1/2W ±1%
R584 5.6K 1/2W
C583 1 16V
C584 1 16V
R589 15 5W
C581 0.22 250V
L575 TLH85815
Q583 2SC4212H
Q585 2SB1413S
R586 1.21K ±1%
S3
S4
4.2Vp-p
875Vp-p
T542 TLH35501Z1
5.7Vp-p
91V
0V
103V
P4
P1
N511B
H_OUT1
H_GND
⑤
⑤
①
②
③
R718 3.3K 1/2W
C718 0.01
Q719 2SD1641
D719 EM01Z
Q550 2SC4288A
C554 2200P ±3% 1.5KV
C553 2200P ±3% 1.5KV
Q717 2SC1473QR
D714 MA142K
C719 0.01 250V
C720 0.01 250V
C555 3.3 250V
R554 6.8 3W
D550 FMP-G3FS
R717 3.3K 1/2W
C712 0.01
D717 MA28TA
5.2Vp-p
L550 EXCELSR35
L551 EXCELSR35
10.9Vp-p
D888
C888 10 100V
R882 1K
D853 ERA18-04
R883 390 1/2W
R884 100K
185Vp-p
185Vp-p
0.7Vp-p
R885 100
Q853 IRFI634G
Q851 2SD874AQR
R887 22 1/2W
C887 4.7 35V
R886 100
R888 100K
Q852 2SB766AQR
L850 TLP85708R
D854 MA30A
D855 MA8150M
D856 CB903-4
Q850 2SC4212H
R889 8.2K
Q854 2SC3938QR
C889 68 200V
1.3Vp-p
195Vp-p
R879 68K 1W
C885 2700P 500V
Q856 XDC114E
R880 1.21K ±1%
0V
R881 2.21K ±1%
Q857 XDC114E
TNP800963X

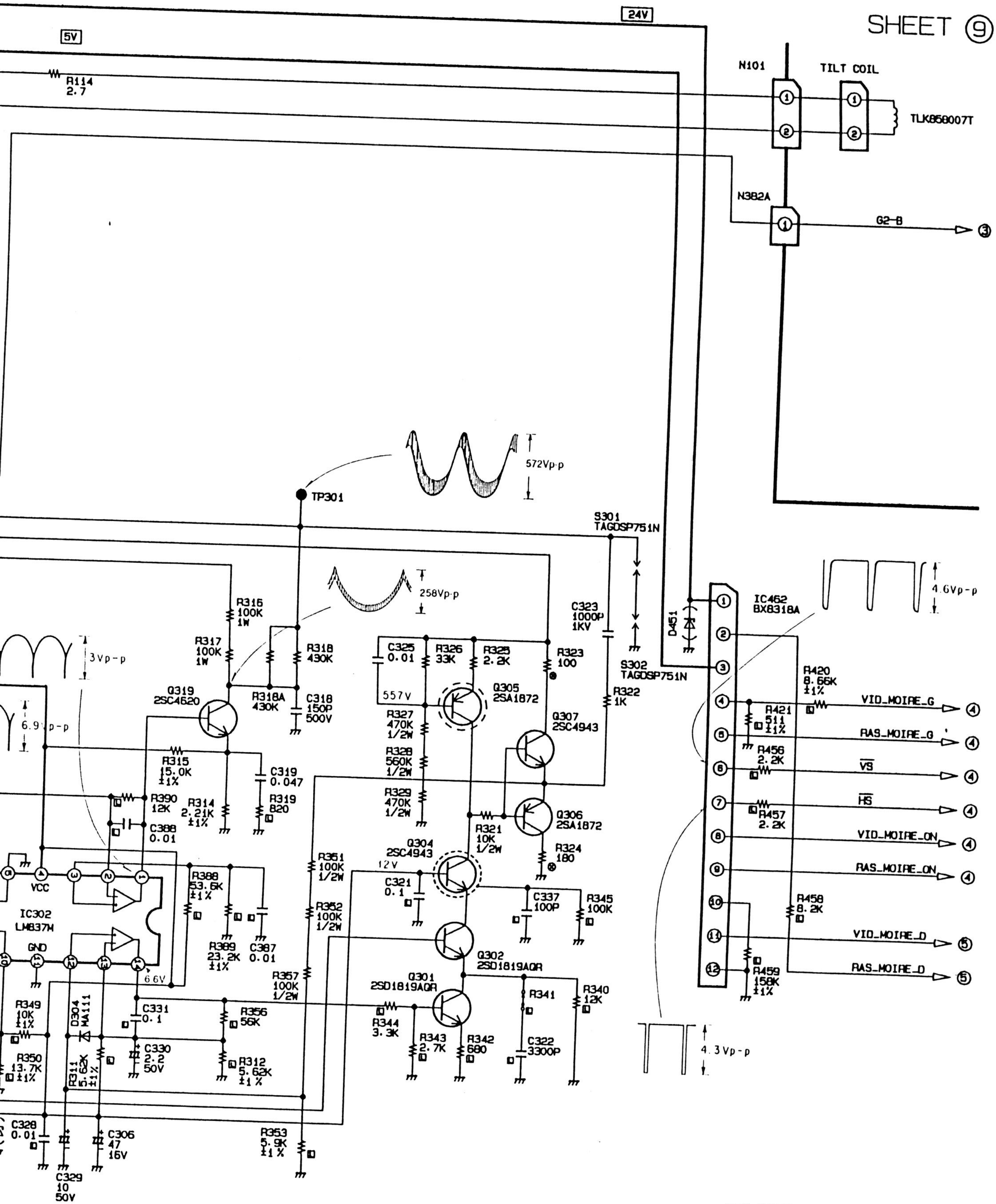

12V
R659 1K
R658 15K
C663 0.1
R657 10K
R656 1K
R650 3.92K ±1%
R652 4.7K
R640 2.2K
R644 10
Q644 2SD1820AQR
12.2Vp-p
Q690 IRFPF50
7.8V
R653 1K
R642 100
R646 22
R690 100K
D690 MA8200H
1.4Vp-p
IC635 LM339M
GND
VCC
R651 3.92K ±1%
D652 MA8051M
R641 100
Q645 2SB1219QR
Q630 2SC3938QR
11.6Vp-p
H_PULSE
R630 18K
R631 4.7K
D635 MA8150M
R634 10K ±1%
C634 2700P
R633 100
R636 5.36K ±1%
R645 10
R637 15.8K ±1%
C635 0.01
C638 0.01
R638 4.64K ±1%
5Vp-p
196Vp-p
11.9Vp-p
24V
183V
D674 ERA18-04
D679
C679 12 63V
HD
R669 3.9K
R674 390 1/2W
R679 100K
R672 1K
D666 MA111
R665 10K
R664 10K
R663 10K
D667 MA111
D668 MA111
R675 100
196Vp-p
D669 MA111
R667 2.2K
C665 120P
C666 1000P
Q680 IRFI634G
Q675 2SD874AQR
C674 47 35V
C662 0.1 50V
C667 220P
C672 4.7 35V
R678 22 1/2W
L681 TLP8570BR
1.1Vp-p
D661 MA8150M
R676 100
R680 100K
Q676 2SB766AQR
Vcc
Sync+
Sync-
C-
C+
CT
GND
D672 MA30A
D680 MA8150M
Q674 2SC4212H
L680 EXCELDR35
Q672 2SC3938QR
EHT
R668 100K
ERR IN+
ERR IN-
ERR OUT
NC
ON/OFF
OUT
GND
1.3Vp-p
1.2Vp-p
D681 CE903-4
7.7V
IC660 TVS1103
C668 0.012
C694 6800P
D660
D662 MA8130H
EHT_B_OFF
Q673 XDC114E
C664 1000P
R661 120K
0V
D670
R670
R662 1.5K
R660 2.74K ±1%
C661 5600P
R666 27K
C660 47 35V
C684
R684
EHT_FB
⑦
⑥
⑤
④

TNP890532 ⚠


12V
12.2Vp-p
540Vp-p
Q690
IRFPF50
D690
MA8200H
C690
2200P
±3%
1.2KV
C691
390P
±5%
2KV
90V
11.6Vp-p
196Vp-p
24V
T601
ETF42L28AZ
6000P
C696
1000P
R695
11K
±1%
C693
470P
R691
210K
±1%
C695
220P
500V
C697
47
50V
R696
100K
1/2W
R697
100K
1/2W
S691 TAGDSP201M
EHT
N104
GND
GND
D695
MA4130H
C698
4.7
50V
R698
220
D_FOCUS
S_FOCUS
1000P
DAF
R699
330
1/2W
R610
100K
1/2W
C604
1
50V
R611
100K
1/2W
1000P
FOCUS
R693
5.62K
±1%
R692
22K
ABL
C609
2.2
160V
D606
MA111
N102
D602
MA167
R602
10
TCO
C105
R107
-110V
G1_B
D601
RU1P
D608
RU1P
R601
150
2W
D604
EU02Z
R605
10
C603
22
250V
C601
22
100V
C685
220
1KV
C686
220
1KV
R685
120
1/2W
R686
120
1/2W
R687
120
1/2W
762V
D610
RD82P
C605
3.3
250V
R606
8.2K
3W
G2_DEGAUSS_B
R620
100K
L681
TLP8570BR
D611
RD82P
R607
8.2K
3W
H_DAF_B
R608
100K
1W
LDR35
C681
3.3
250V
R603
D609
C607
VCC
(IC601)
GND
C606
4.7
400V
R609
82K
1W
V_DAF_B
R604
C610
4.7
400V
R621
220K
1/2W
R622
220K
1/2W
D603
R613
R624
Q601
R615
R614
R612
R617
P_STOP
R616
D605
C608
R623
R682
R618
D607
R694
205K
±1%
R683
R619
C683
R625

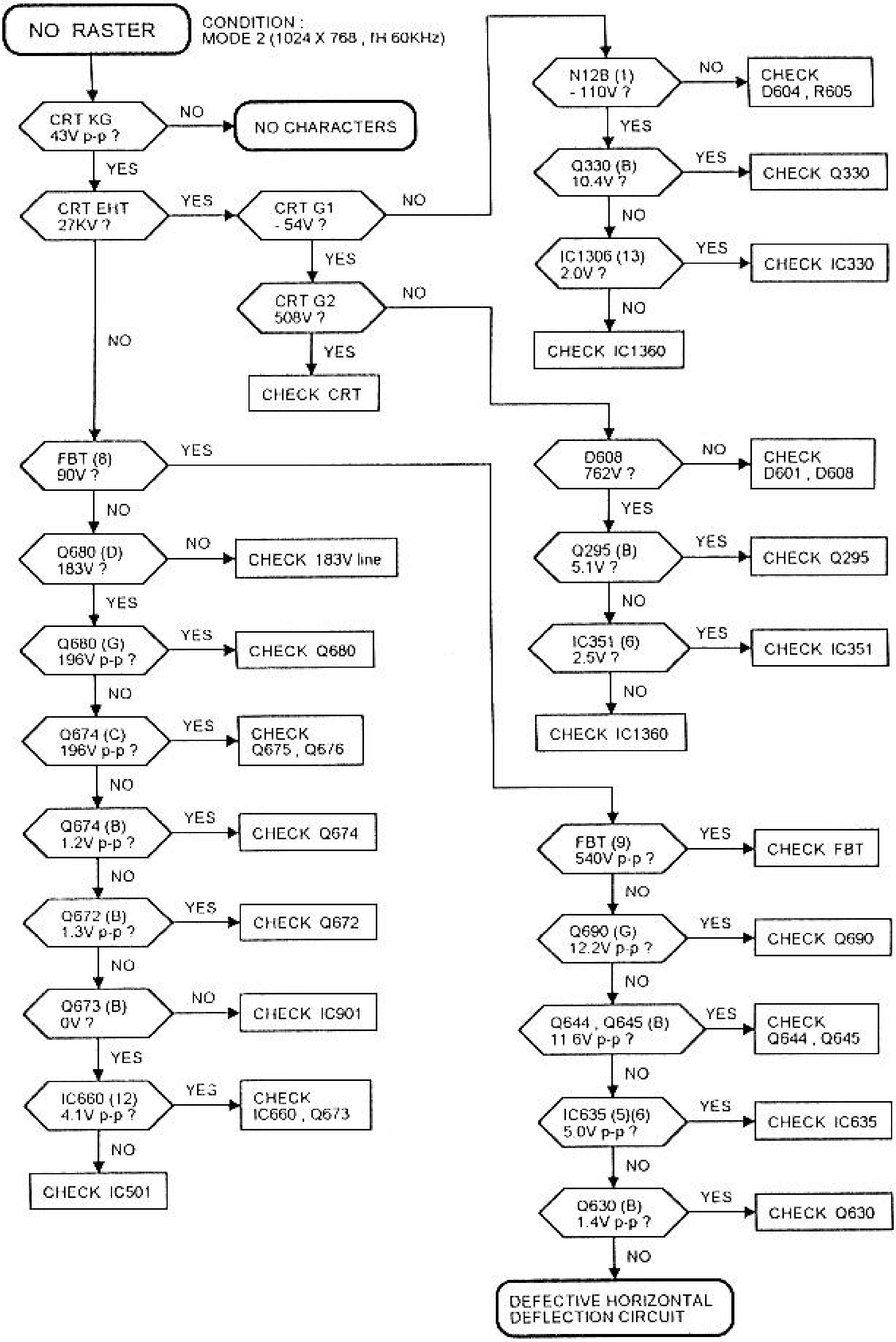

24V
12V
HEATER2
5V
5V
C109
R111 2.7K
R113 2.7K
R114 2.7
C108 4.7 50V
R108 1.74K ±1%
C112 0.33
3.3V
R109 3.32K ±1%
R102 69.8K ±1%
R106 680
C101 0.01
VCC
GND
2.1V
Q103 2SD1994ARS
4.2V
Q104 2SB1322ARS
3.5V
R101 60.4K ±1%
R103 37.4K ±1%
R105 1K
C106 0.33
IC101 LM324M
2.2V
Q101 2SD1994ARS
3.1V
C107 4.7 50V
2.5V
Q102 2SB1322ARS
G2_DEGAUSS_B
DAF
H_DAF_B
V_DAF_B
Z_AXIS
2Vp-p
DAF_GAIN_V
R371 6.8K
DAF_POSI_V
R369 10K
3Vp-p
R361 5.6K
C362
C370 0.01
C371 100 16V
12V
5Vp-p
R372 2.2K
R382 12.1K ±1%
D371 MA8062L
6.9Vp-p
R375 2.2K
C391 10 50V
C373 0.033
C372 0.022
C375 33 16V
R381 8.25K ±1%
C377 56P
C378 33 25V
R386 2.7K
R376 2K ±1%
R377 51
C374 0.39
C376 0.15
R385 3.3K
1.3V
1.3V
V4
VD1
VD2
VC
VVCC
VP
VHOL
VV2
VSAW
VGND
VG
VA1
VA2
VOUT
VCC
IC301 TVS1093
IC302 LM837M
10.4Vp-p
HGND
V6
HD1
HD2
HC
HP
HHOL
HV2
HSAW
HVCC
HG
HA1
HA2
HOUT
GND
Q321 XDC114E
VS
R378 1.0K ±1%
C380 82P
R379 51
1.3V
C382 0.01
C392 1000P
1.3V
C327 15P
R354 12K
R349 10K ±1%
D304 MA111
DAF_POSI_H
C381 33P
C383 1 50V
C384 56P
C385 0.056
R391 5.6K
C326 0.01
R350 13.7K ±1%
R311 5.62K ±1%
R362 3.9K
DAF_GAIN_H
R374 6.8K
D372
R384 1.96K ±1%
R368 10K
R383 4.02K ±1%
C363
C379 1 50V
D309
C328 0.01
C306 47 16V
H_PULSE2
R373 6.81K ±1%
C329 10 50V
3.8Vp-p

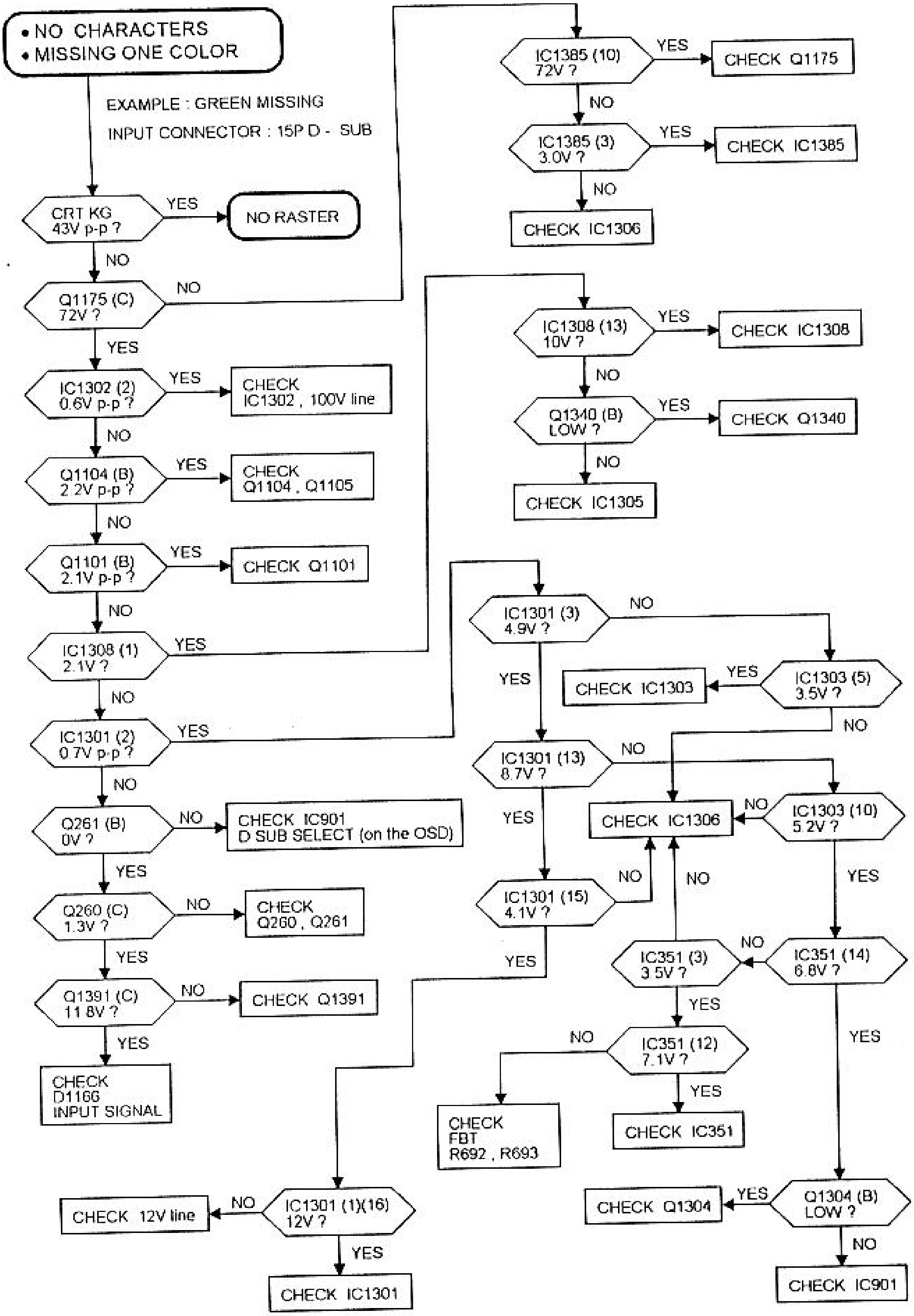
SHEET ⑨

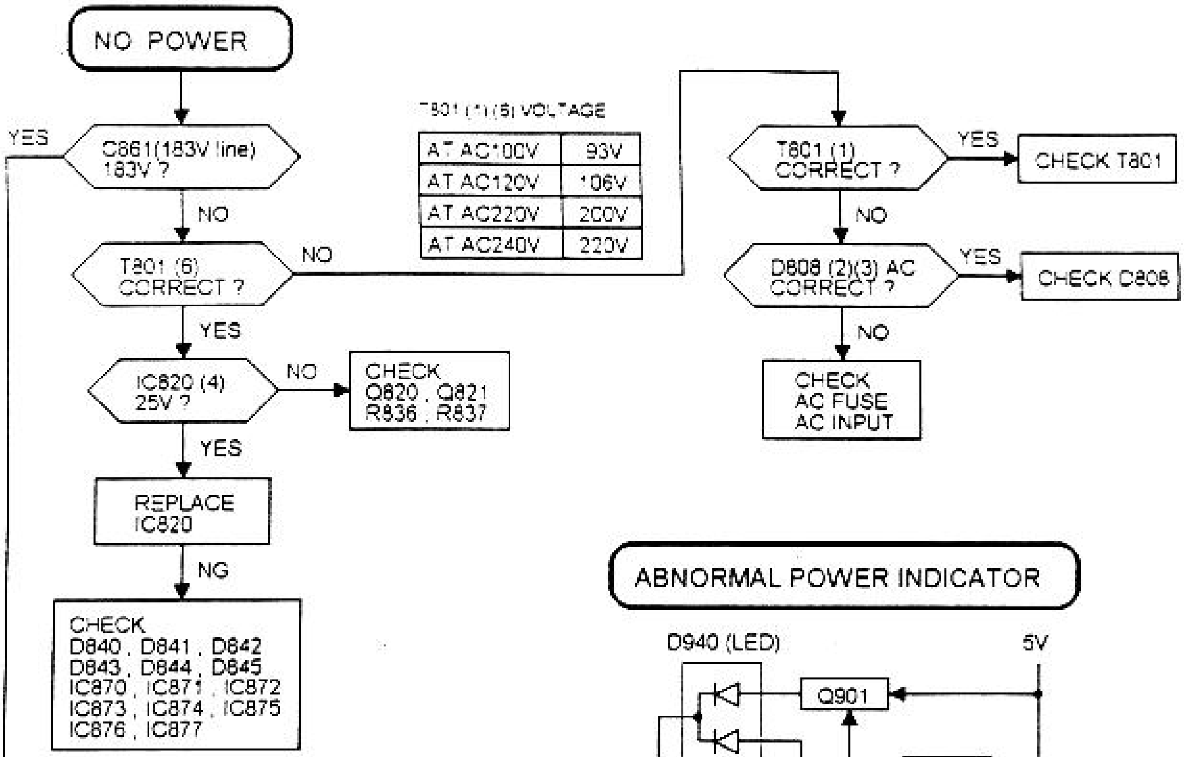

24V
5V
R114
2.7
N101
TILT COIL
TLK858007T
N382A
G2-B
③
572Vp-p
TP301
S301
TAGDSP751N
S302
TAGDSP751N
258Vp-p
3Vp-p
6.9Vp-p
R316
100K
1W
R317
100K
1W
R318
430K
R318A
430K
C318
150P
500V
Q319
2SC4620
R315
15.0K
±1%
C319
0.047
R390
12K
R314
2.21K
±1%
R319
820
C388
0.01
C325
0.01
R326
33K
R325
2.2K
R323
100
C323
1000P
1KV
R322
1K
557V
Q305
2SA1872
R327
470K
1/2W
R328
560K
1/2W
R329
470K
1/2W
Q307
2SC4943
Q306
2SA1872
R321
10K
1/2W
R324
180
Q304
2SC4943
12V
C321
0.1
C337
100P
R345
100K
Q302
2SD1819AQR
Q301
2SD1819AQR
R341
R340
12K
R344
3.3K
R343
2.7K
R342
680
C322
3300P
R351
100K
1/2W
R352
100K
1/2W
R357
100K
1/2W
R353
5.9K
±1%
VCC
IC302
LM837M
GND
R388
53.6K
±1%
R389
23.2K
±1%
C387
0.01
6.6V
R349
10K
±1%
R350
13.7K
±1%
D304
MA111
R311
5.62K
±1%
C331
0.1
C330
2.2
50V
R356
56K
R312
5.62K
±1%
C328
0.01
C329
10
50V
C306
47
16V
D451
IC462
BX8318A
4.6Vp-p
R420
8.66K
±1%
R421
511
±1%
R456
2.2K
R457
2.2K
R458
8.2K
R459
158K
±1%
VID_MOIRE_G
RAS_MOIRE_G
VS
HS
VID_MOIRE_ON
RAS_MOIRE_ON
VID_MOIRE_D
RAS_MOIRE_D
④
⑤
4.3Vp-p

TNP890532 ⚠

TROUBLE SHOOTING HINTS


NO RASTER
CONDITION :
MODE 2 (1024 X 768 , fH 60KHz)
CRT KG
43V p-p ?
NO
NO CHARACTERS
YES
CRT EHT
27KV ?
YES
CRT G1
- 54V ?
NO
YES
CRT G2
508V ?
NO
YES
CHECK CRT
NO
N12B (1)
- 110V ?
NO
CHECK
D604 , R605
YES
Q330 (B)
10.4V ?
YES
CHECK Q330
NO
IC1306 (13)
2.0V ?
YES
CHECK IC330
NO
CHECK IC1360
D608
762V ?
NO
CHECK
D601 , D608
YES
Q295 (B)
5.1V ?
YES
CHECK Q295
NO
IC351 (6)
2.5V ?
YES
CHECK IC351
NO
CHECK IC1360
FBT (8)
90V ?
YES
NO
Q680 (D)
183V ?
NO
CHECK 183V line
YES
Q680 (G)
196V p-p ?
YES
CHECK Q680
NO
Q674 (C)
196V p-p ?
YES
CHECK
Q675 , Q676
NO
Q674 (B)
1.2V p-p ?
YES
CHECK Q674
NO
Q672 (B)
1.3V p-p ?
YES
CHECK Q672
NO
Q673 (B)
0V ?
NO
CHECK IC901
YES
IC660 (12)
4.1V p-p ?
YES
CHECK
IC660 , Q673
NO
CHECK IC501
FBT (9)
540V p-p ?
YES
CHECK FBT
NO
Q690 (G)
12.2V p-p ?
YES
CHECK Q690
NO
Q644 , Q645 (B)
11 6V p-p ?
YES
CHECK
Q644 , Q645
NO
IC635 (5)(6)
5.0V p-p ?
YES
CHECK IC635
NO
Q630 (B)
1.4V p-p ?
YES
CHECK Q630
NO
DEFECTIVE HORIZONTAL
DEFLECTION CIRCUIT

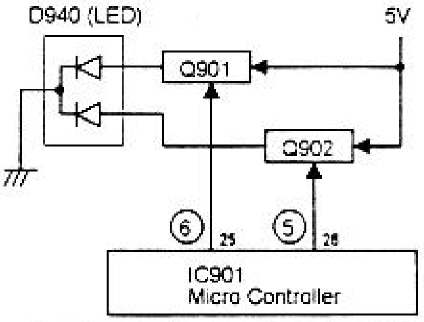

• NO CHARACTERS
• MISSING ONE COLOR
EXAMPLE : GREEN MISSING
INPUT CONNECTOR : 15P D - SUB
CRT KG 43V p-p ?
YES
NO RASTER
NO
Q1175 (C) 72V ?
NO
IC1385 (10) 72V ?
YES
CHECK Q1175
NO
IC1385 (3) 3.0V ?
YES
CHECK IC1385
NO
CHECK IC1306
YES
IC1302 (2) 0.6V p-p ?
YES
CHECK IC1302 , 100V line
NO
Q1104 (B) 2.2V p-p ?
YES
CHECK Q1104 , Q1105
NO
Q1101 (B) 2.1V p-p ?
YES
CHECK Q1101
NO
IC1308 (1) 2.1V ?
YES
IC1308 (13) 10V ?
YES
CHECK IC1308
NO
Q1340 (B) LOW ?
YES
CHECK Q1340
NO
CHECK IC1305
NO
IC1301 (2) 0.7V p-p ?
YES
IC1301 (3) 4.9V ?
NO
IC1303 (5) 3.5V ?
YES
CHECK IC1303
NO
YES
IC1301 (13) 8.7V ?
NO
IC1303 (10) 5.2V ?
NO
CHECK IC1306
YES
IC1351 (14) 6.8V ?
NO
IC351 (3) 3.5V ?
NO
YES
IC351 (12) 7.1V ?
NO
CHECK FBT R692 , R693
YES
CHECK IC351
YES
Q1304 (B) LOW ?
YES
CHECK Q1304
NO
CHECK IC901
YES
IC1301 (15) 4.1V ?
NO
YES
IC1301 (1)(16) 12V ?
NO
CHECK 12V line
YES
CHECK IC1301
NO
Q261 (B) 0V ?
NO
CHECK IC901 D SUB SELECT (on the OSD)
YES
Q260 (C) 1.3V ?
NO
CHECK Q260 , Q261
YES
Q1391 (C) 11.8V ?
NO
CHECK Q1391
YES
CHECK D1166 INPUT SIGNAL


NO POWER
YES
C861(183V line) 183V ?
NO
T801 (6) CORRECT ?
NO
YES
IC820 (4) 25V ?
NO
CHECK Q820 , Q821 R836 , R837
YES
REPLACE IC820
NG
CHECK D840 , D841 , D842 D843 , D844 , D845 IC870 , IC871 , IC872 IC873 , IC874 , IC875 IC876 , IC877
T801 (1) CORRECT ?
YES
CHECK T801
NO
D808 (2)(3) AC CORRECT ?
YES
CHECK D808
NO
CHECK AC FUSE AC INPUT

T801 (1)(6) VOLTAGE

AT AC100V	93V
AT AC120V	106V
AT AC220V	200V
AT AC240V	220V

ABNORMAL POWER INDICATOR

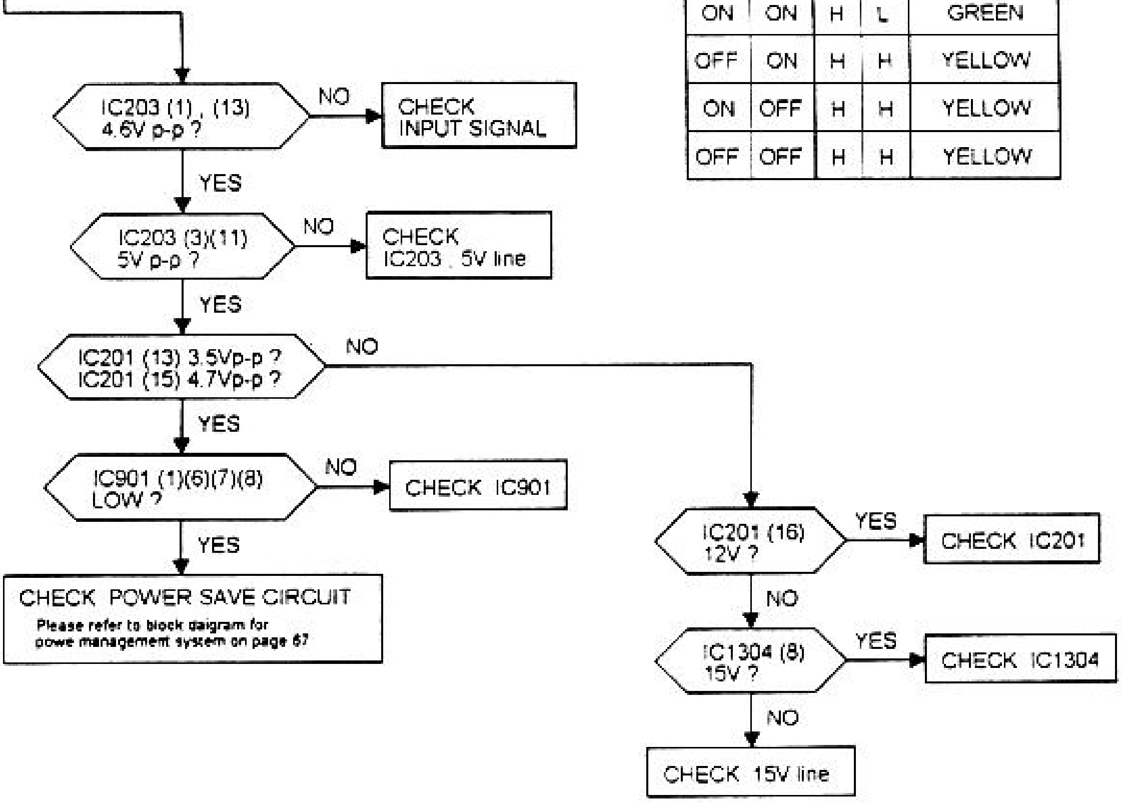

D940 (LED)
5V
Q901
Q902
⑥
25
⑤
26
IC901
Micro Controller

HS	VS	⑤	⑥	COLOR
ON	ON	H	L	GREEN
OFF	ON	H	H	YELLOW
ON	OFF	H	H	YELLOW
OFF	OFF	H	H	YELLOW

ABNORMAL POWER SAVER

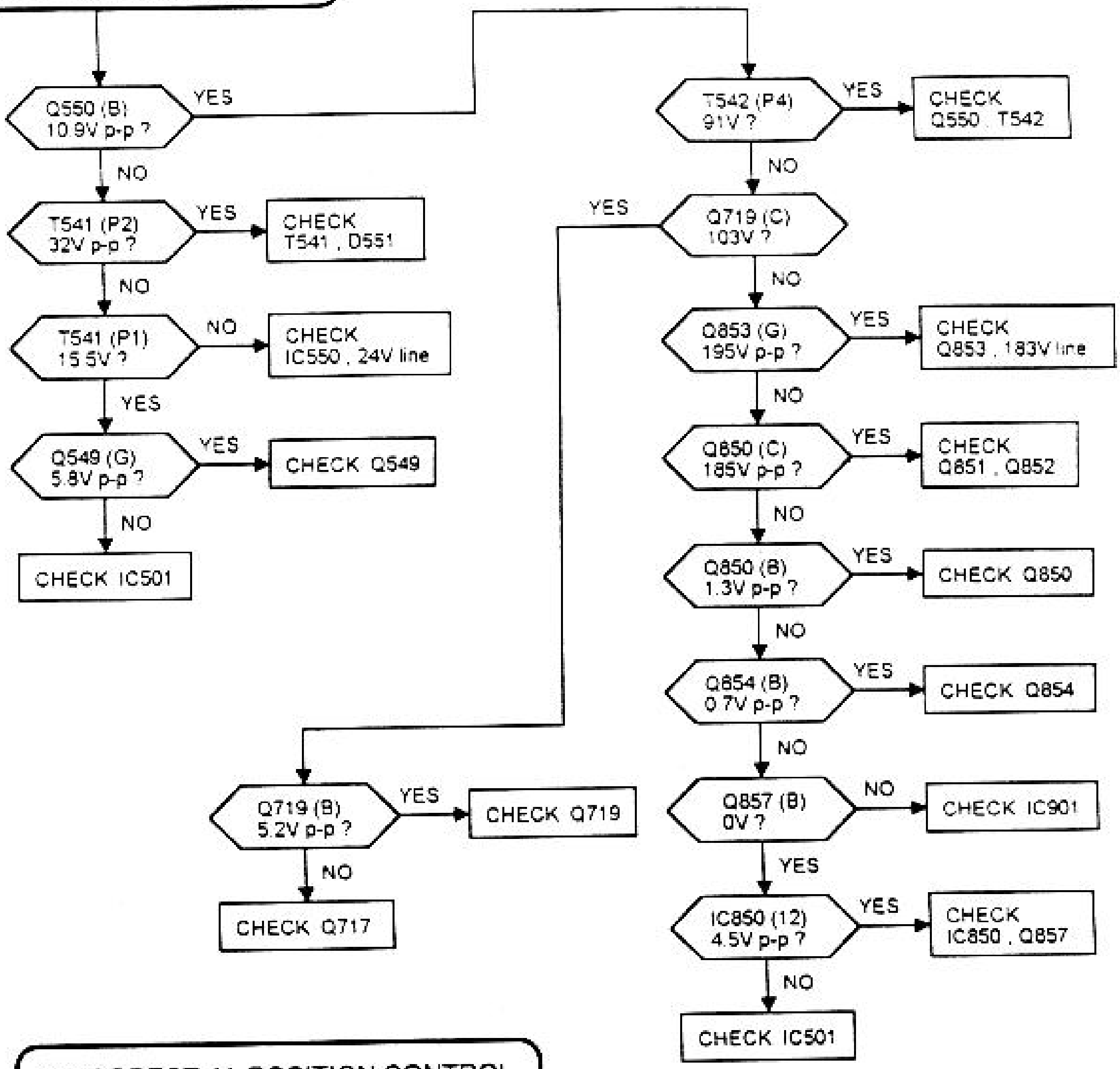
INPUT CONNECTOR : 15P D_SUB

SIGNAL : SEPARATE SYNC

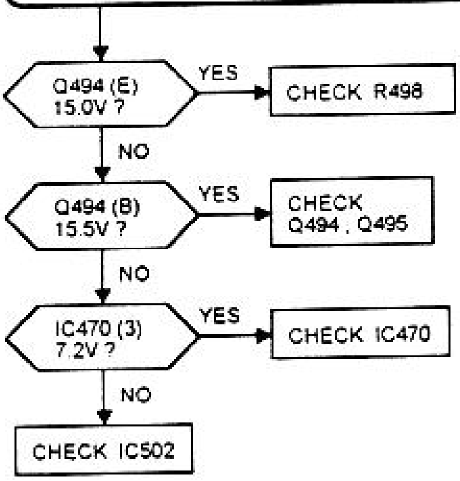

IC203 (1) , (13) 4.6V p-p ?
NO
CHECK INPUT SIGNAL
YES
IC203 (3)(11) 5V p-p ?
NO
CHECK IC203 , 5V line
YES
IC201 (13) 3.5Vp-p ? IC201 (15) 4.7Vp-p ?
NO
YES
IC901 (1)(6)(7)(8) LOW ?
NO
CHECK IC901
YES
CHECK POWER SAVE CIRCUIT
Please refer to block daigram for powe management system on page 67
IC201 (16) 12V ?
YES
CHECK IC201
NO
IC1304 (8) 15V ?
YES
CHECK IC1304
NO
CHECK 15V line

DEFECTIVE HORIZONTAL DEFLECTION CIRCUIT

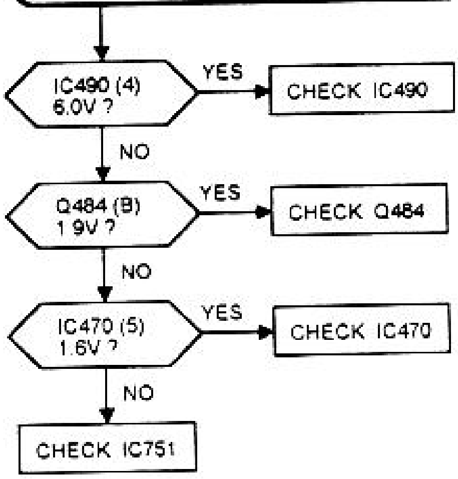
CONDITION : MODE 2 (1024 X 768 : fH 60KHz)


Q550 (B) 10.9V p-p ?
YES
NO
T541 (P2) 32V p-p ?
YES
CHECK T541 , D551
NO
T541 (P1) 15.5V ?
NO
CHECK IC550 , 24V line
YES
Q549 (G) 5.8V p-p ?
YES
CHECK Q549
NO
CHECK IC501
T542 (P4) 91V ?
YES
CHECK Q550 , T542
NO
Q719 (C) 103V ?
YES
NO
Q853 (G) 195V p-p ?
YES
CHECK Q853 , 183V line
NO
Q850 (C) 185V p-p ?
YES
CHECK Q851 , Q852
NO
Q850 (B) 1.3V p-p ?
YES
CHECK Q850
NO
Q854 (B) 0.7V p-p ?
YES
CHECK Q854
NO
Q857 (B) 0V ?
NO
CHECK IC901
YES
IC850 (12) 4.5V p-p ?
YES
CHECK IC850 , Q857
NO
CHECK IC501
Q719 (B) 5.2V p-p ?
YES
CHECK Q719
NO
CHECK Q717

INCORRECT V. POSITION CONTROL


Q494 (E) 15.0V ?
YES
CHECK R498
NO
Q494 (B) 15.5V ?
YES
CHECK Q494 , Q495
NO
IC470 (3) 7.2V ?
YES
CHECK IC470
NO
CHECK IC502

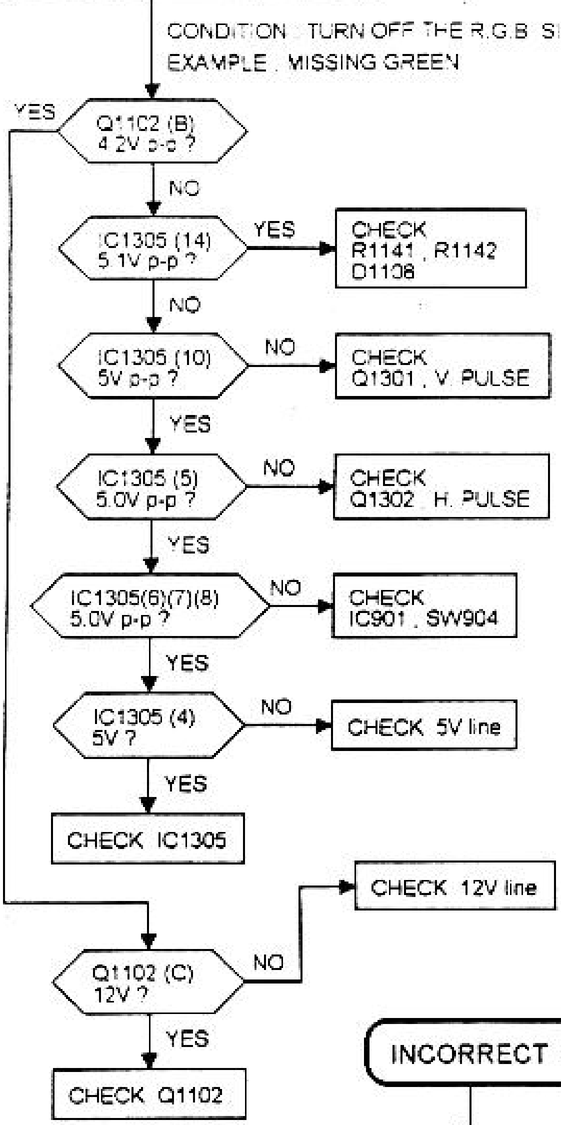
INCORRECT V. SIZE CONTROL


IC490 (4) 6.0V ?
YES
CHECK IC490
NO
Q484 (B) 1.9V ?
YES
CHECK Q484
NO
IC470 (5) 1.6V ?
YES
CHECK IC470
NO
CHECK IC751

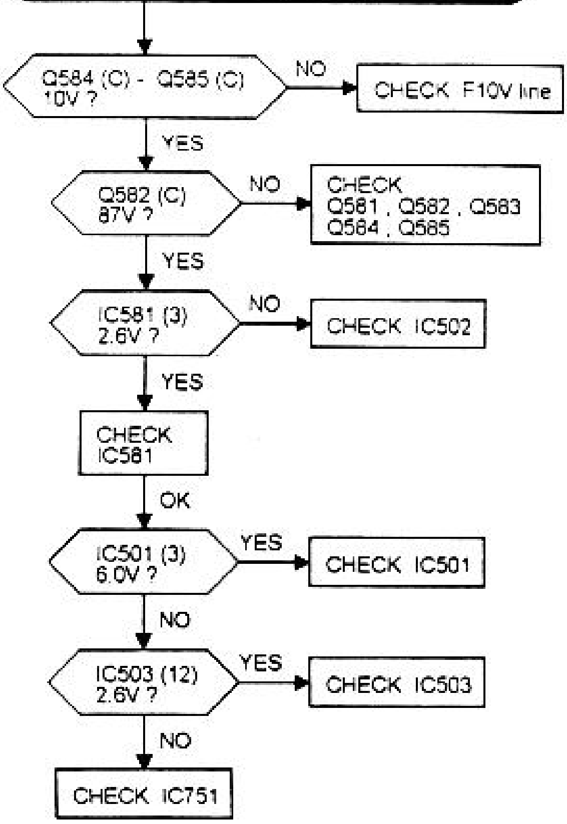
O.S.D. DOES NOT WORK

Please refer to block diagram for O.S.D. operation on page 58.

CONDITION : TURN OFF THE R.G.B. SIGNALS
EXAMPLE : MISSING GREEN

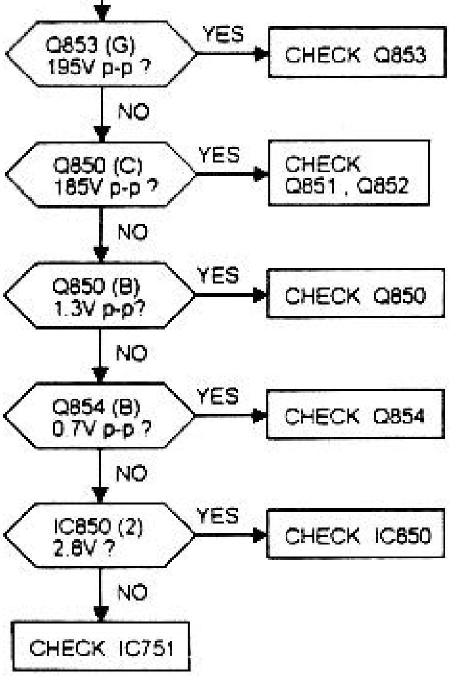

Q1102 (B) 4.2V p-p ?
YES
NO
IC1305 (14) 5.1V p-p ?
YES
CHECK R1141 , R1142 D1108
NO
IC1305 (10) 5V p-p ?
NO
CHECK Q1301 , V. PULSE
YES
IC1305 (5) 5.0V p-p ?
NO
CHECK Q1302 , H. PULSE
YES
IC1305(6)(7)(8) 5.0V p-p ?
NO
CHECK IC901 , SW904
YES
IC1305 (4) 5V ?
NO
CHECK 5V line
YES
CHECK IC1305
CHECK 12V line
Q1102 (C) 12V ?
NO
YES
CHECK Q1102

INCORRECT H. POSITION CONTROL

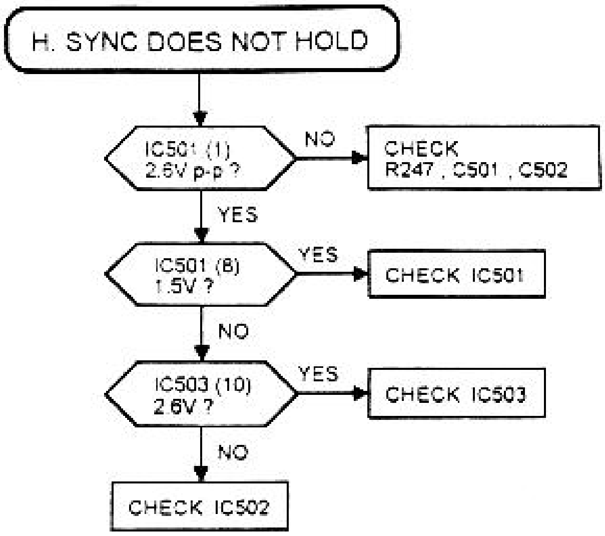

Q584 (C) - Q585 (C) 10V ?
NO
CHECK F10V line
YES
Q582 (C) 87V ?
NO
CHECK Q581 , Q582 , Q583 Q584 , Q585
YES
IC581 (3) 2.6V ?
NO
CHECK IC502
YES
CHECK IC581
OK
IC501 (3) 6.0V ?
YES
CHECK IC501
NO
IC503 (12) 2.6V ?
YES
CHECK IC503
NO
CHECK IC751

INCORRECT H. SIZE CONTROL

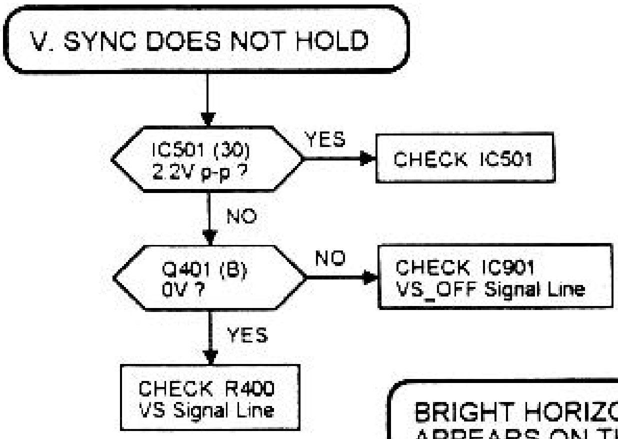
CONDITION :
MODE 2 (1024 X 768 , fH 60KHz)

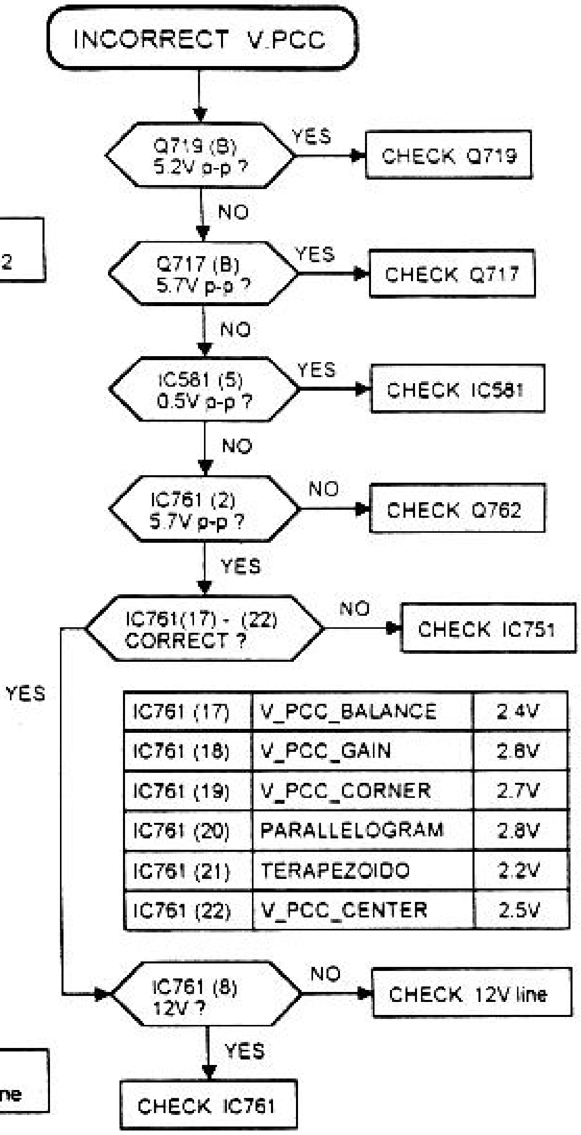

Q853 (G) 195V p-p ?
YES
CHECK Q853
NO
Q850 (C) 185V p-p ?
YES
CHECK Q851 , Q852
NO
Q850 (B) 1.3V p-p?
YES
CHECK Q850
NO
Q854 (B) 0.7V p-p ?
YES
CHECK Q854
NO
IC850 (2) 2.6V ?
YES
CHECK IC850
NO
CHECK IC751

If no horizontal sync from PC, then the power save circuit becomes active.

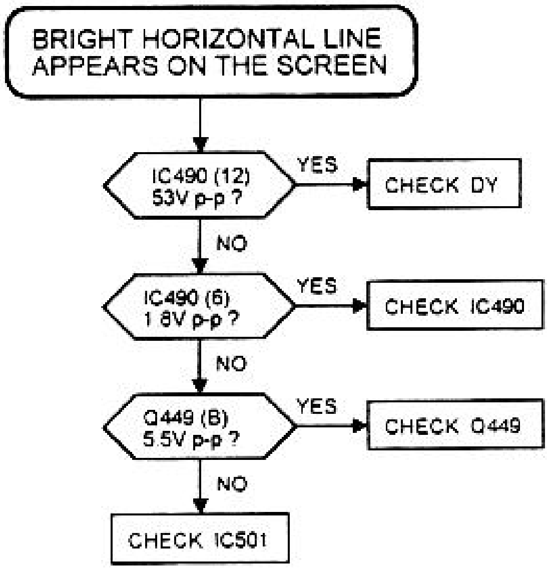

H. SYNC DOES NOT HOLD
IC501 (1) 2.6V p-p ?
NO
CHECK R247 , C501 , C502
YES
IC501 (8) 1.5V ?
YES
CHECK IC501
NO
IC503 (10) 2.6V ?
YES
CHECK IC503
NO
CHECK IC502

If no vertical sync from PC, then the power save circuit becomes active.


V. SYNC DOES NOT HOLD
IC501 (30) 2.2V p-p ?
YES
CHECK IC501
NO
Q401 (B) 0V ?
NO
CHECK IC901 VS_OFF Signal Line
YES
CHECK R400 VS Signal Line

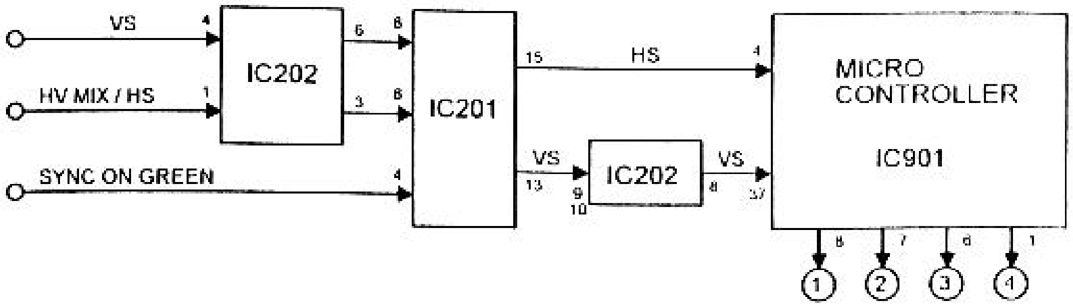

INCORRECT V.PCC
Q719 (B) 5.2V p-p ?
YES
CHECK Q719
NO
Q717 (B) 5.7V p-p ?
YES
CHECK Q717
NO
IC581 (5) 0.5V p-p ?
YES
CHECK IC581
NO
IC761 (2) 5.7V p-p ?
NO
CHECK Q762
YES
IC761(17) - (22) CORRECT ?
NO
CHECK IC751
YES
IC761 (8) 12V ?
NO
CHECK 12V line
YES
CHECK IC761

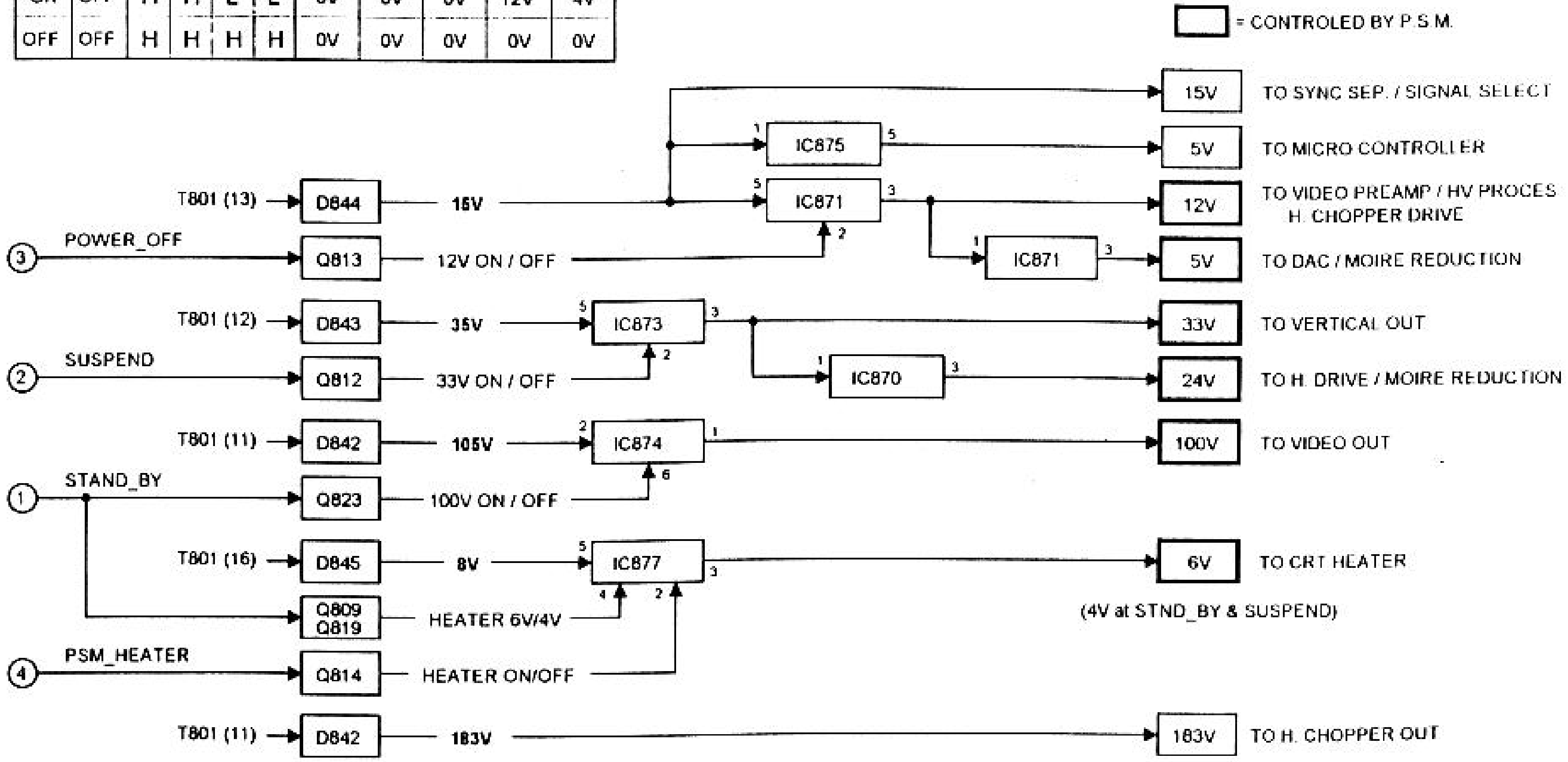
IC761 (17)	V_PCC_BALANCE	2.4V
IC761 (18)	V_PCC_GAIN	2.8V
IC761 (19)	V_PCC_CORNER	2.7V
IC761 (20)	PARALLELOGRAM	2.8V
IC761 (21)	TERAPEZOIDO	2.2V
IC761 (22)	V_PCC_CENTER	2.5V


BRIGHT HORIZONTAL LINE APPEARS ON THE SCREEN
IC490 (12) 53V p-p ?
YES
CHECK DY
NO
IC490 (6) 1.8V p-p ?
YES
CHECK IC490
NO
Q449 (B) 5.5V p-p ?
YES
CHECK Q449
NO
CHECK IC501

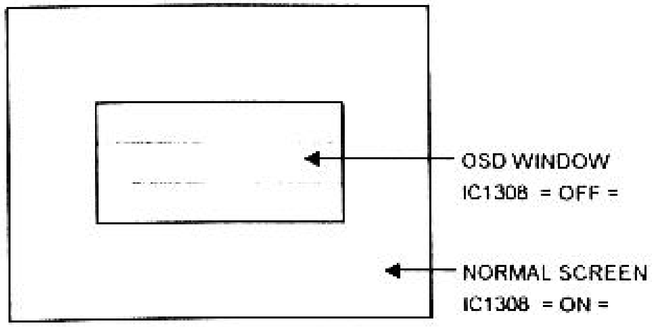
POWER SAVE MANAGEMENT

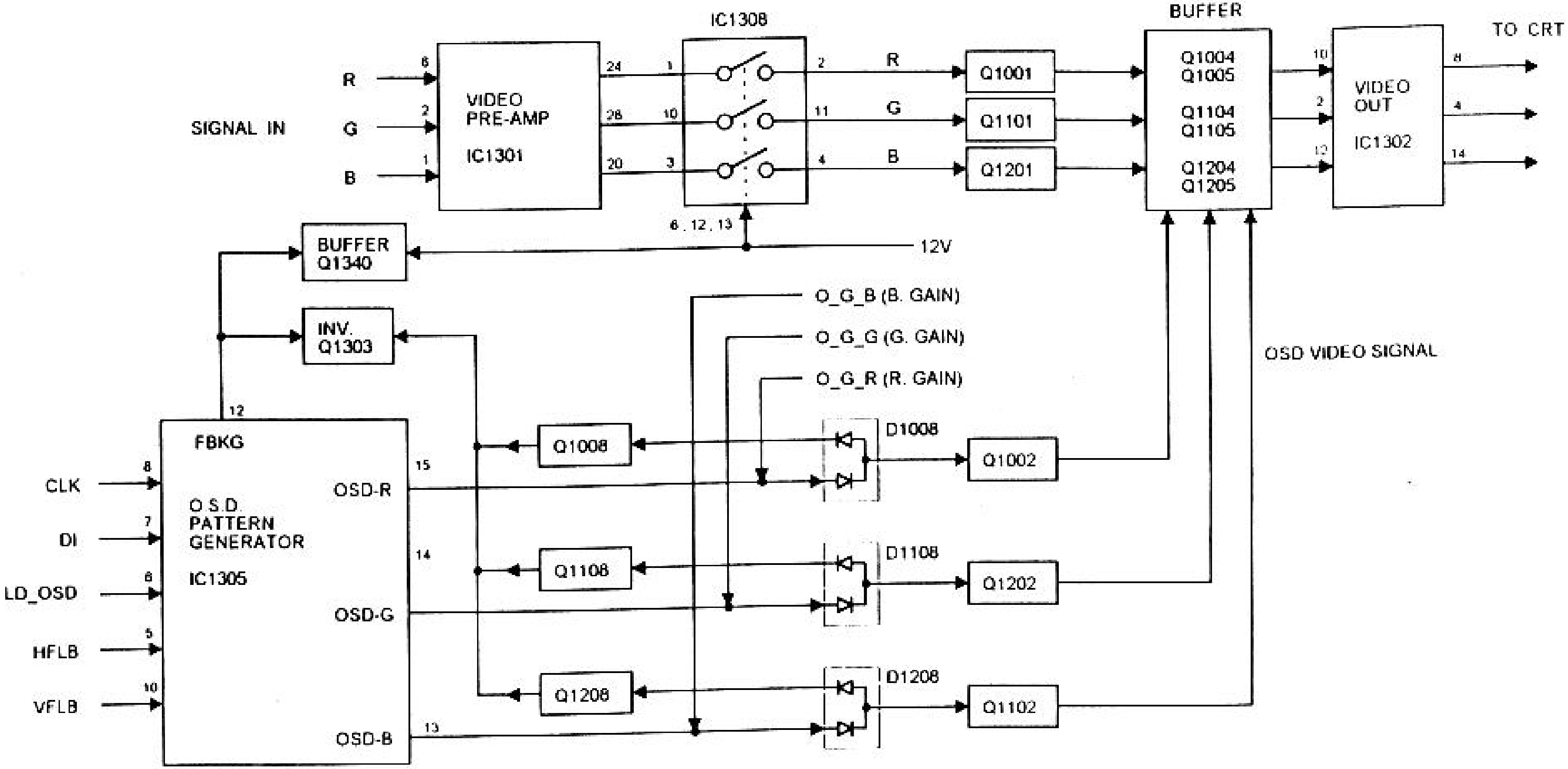
HS	VS	①	②	③	④	100V LINE	33V LINE	24V LINE	12V LINE	6V LINE
ON	ON	L	L	L	L	100V	28.5V	24V	12V	6V
OFF	ON	H	H	L	L	0V	0V	0V	12V	4V
ON	OFF	H	H	L	L	0V	0V	0V	12V	4V
OFF	OFF	H	H	H	H	0V	0V	0V	0V	0V


VS
HV MIX / HS
SYNC ON GREEN
IC202
IC201
HS
VS
IC202
VS
MICRO CONTROLLER
IC901
4
1
6
3
8
8
4
15
13
9
10
8
37
4
8
7
6
1
①
②
③
④

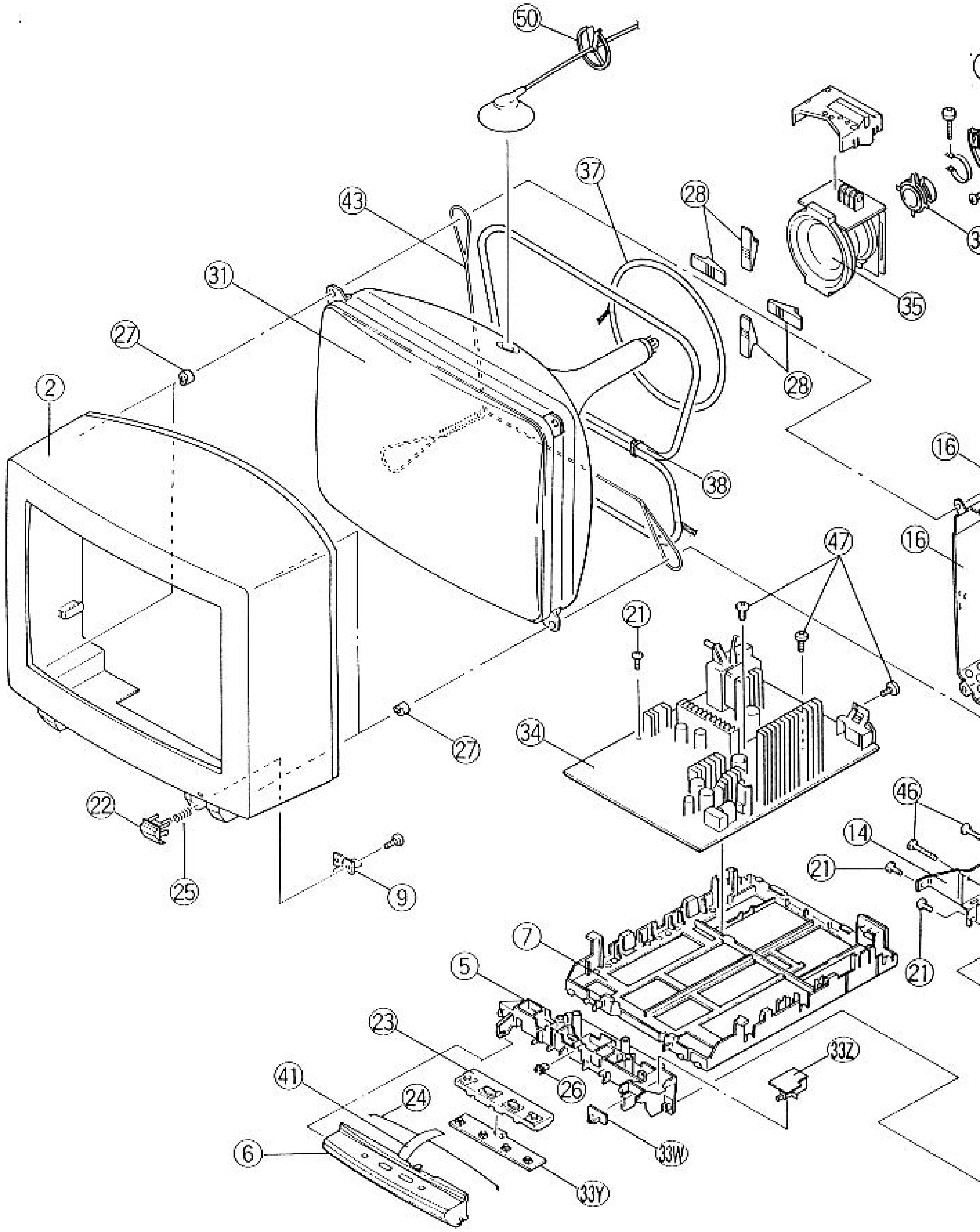

= CONTROLED BY P.S.M.
T801 (13)
D844
15V
POWER_OFF
③
Q813
12V ON / OFF
T801 (12)
D843
35V
SUSPEND
②
Q812
33V ON / OFF
T801 (11)
D842
105V
STAND_BY
①
Q823
100V ON / OFF
T801 (16)
D845
8V
Q809
Q819
HEATER 6V/4V
PSM_HEATER
④
Q814
HEATER ON/OFF
T801 (11)
D842
183V
IC875
IC871
IC871
IC873
IC870
IC874
IC877
1
5
5
3
2
1
3
5
3
2
1
3
2
1
6
5
3
4
2
15V
TO SYNC SEP. / SIGNAL SELECT
5V
TO MICRO CONTROLLER
12V
TO VIDEO PREAMP / HV PROCES
H. CHOPPER DRIVE
5V
TO DAC / MOIRE REDUCTION
33V
TO VERTICAL OUT
24V
TO H. DRIVE / MOIRE REDUCTION
100V
TO VIDEO OUT
6V
TO CRT HEATER
(4V at STND_BY & SUSPEND)
183V
TO H. CHOPPER OUT

O.S.D. OPERATION


OSD WINDOW
IC1308 = OFF =
NORMAL SCREEN
IC1308 = ON =

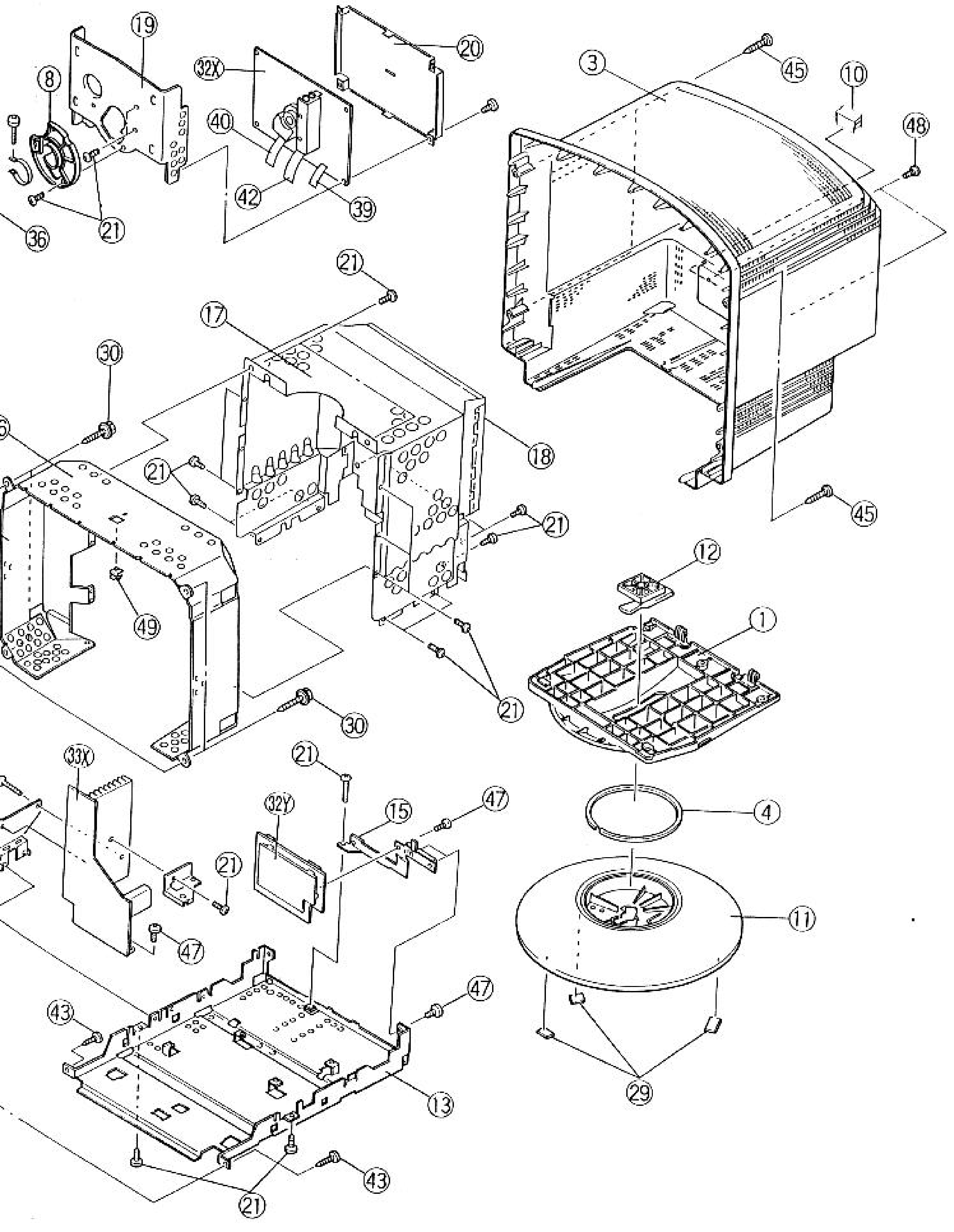

SIGNAL IN
R
G
B
6
2
1
VIDEO PRE-AMP
IC1301
24
28
20
IC1308
1
10
3
2
11
4
6 . 12 . 13
12V
R
G
B
Q1001
Q1101
Q1201
BUFFER
Q1004
Q1005
Q1104
Q1105
Q1204
Q1205
10
2
12
VIDEO OUT
IC1302
8
4
14
TO CRT
BUFFER Q1340
INV. Q1303
O_G_B (B. GAIN)
O_G_G (G. GAIN)
O_G_R (R. GAIN)
OSD VIDEO SIGNAL
12
FBKG
CLK
DI
LD_OSD
HFLB
VFLB
8
7
6
5
10
O.S.D. PATTERN GENERATOR
IC1305
OSD-R
OSD-G
OSD-B
15
14
13
Q1008
Q1108
Q1208
D1008
D1108
D1208
Q1002
Q1202
Q1102

EXPLODE



33Z
33W
33Y

ODED VIEW



32X
33X
32Y

REPLACEMENT PARTS LIST

Important Safety Notice

Components identified by the International symbol ⚠ have special characteristics important for safety. When replacing any of these components use only manufacture's specified parts.

RESISTOR

PART NAME & DESCRIPTION			
TYPE		ALLOWANCE	
C	Carbon	F	± 1%
F	Fuse	J	± 5%
M	Metal Oxide	K	± 10%
S	Solid	M	± 20%
W	Wire Wound	G	± 2%

Example: Part No. ERD25TJ104 Ⓒ Description 100K Ⓙ 1/4W

CAPACITOR

PART NAME & DESCRIPTION			
TYPE		ALLOWANCE	
C	Ceramic	C	± 0.25pF
E	Electrolytic	D	± 0.5pF
P	Polyester	F	± 1pF
S	Styrol	J	± 5%
T	Tantalum	K	± 10%
PP	Polypropylene	L	± 15%
		M	± 20%
		P	+100% - 0%
		Z	+80% - 20%

Example: Part No. ECKF1H103ZF Ⓒ Description 0.01μF Ⓩ 50V

	Ref.No.	Part No.	Description
		CABINET & MAIN PARTS	
⚠	1	TKY859103	BOTTOM CABINET
⚠	2	TTE8537A03-2	ESCUTCHEON
⚠	3	TKU894106	REAR COVER
	4	TKX865201	SPACER RING
	5	TKX866401-1	CONTROL PANEL HOLDER
	6	TKX866901	CONTROL PANEL
	7	TKX867001	MAIN PC BOARD HOLDER
	8	TKX904902-1	CRT PCB HOLDER
	9	TKK859313	LED GUIDE
	10	TKK859740	PANEL COVER
	11	TKK859958-2	PEDESTAL
	12	TKK859961	CENTER POST
	13	TUX86189	BOTTOM PLATE
	14	TUX87719	PCB BRACKET(H-OUT)
	15	TUX87720	PCB BRACKET(VIDEO)
	16	TUC86975	SHIELD CASE(CRT)
	17	TUC87570	SHIELD CASE
	18	TUC87571	SHIELD CASE(REAR)
	19	TUC87572	SHIELD CASE(CRT PCB)
	20	TUC87573	SHIELD PLATE(CRT PCB)
⚠		TBM850528-2	MODEL PLATE<-M>
⚠		TBM850529-2	MODEL PLATE<-E>
⚠		TBM850530-1	MODEL PLATE<-A>
	22	TBX8586508	KNOB(POWER SWITCH)
	23	TBX8752101	KNOB(CONTROL)
	24	TES8355	SPRING(CONTROL PANEL)
		TES8586	EARTH SPRING(SHIELD CASE)
	25	TES9194-4	SPRING(CRT EARTH)SIDE/TOP
		TES9296	SPRING(POWER SWITCH)
		TES9532	SPRING(CRT EARTH)R
		TES9533	SPRING(CRT EARTH)L
	26	TEK6935	DOOR RATCH
	50	TMM15404-1	SPACER RING
		TMM16452	TILT COIL CLAMPER

	Ref.No.	Part No.	Description
	49	TMM7464	DEGAUSS COIL CLAMPER
		TMM7468	CLAMPER
		TMM81416	CORD BAND(SMALL)
		TMM81489	CARD SPACER
		TMM81499	PUSH RIVET
		TMM85475	CLAMPER(BIG)
		TMM85490	LEAD CLAMPER
	27	TMM85576-1	CRT RUBBER
	28	TMM85586	RUBBER(WEDGE)
	29	TMK84990	SET LEG
		TMK85504	HOLDER(R)ITC
		TMK85505	HOLDER(L)ITC
		TMK85572	FERRITE STICK
	30	THT1028	SCREW(FOR CRT)
	45	XTN5+16A	SCREW
	44	XTN5+25A	SCREW
	48	XTV3+10A	SCREW
	46	XTV3+20J	SCREW
		XTV3+8G	SCREW
	47	XYA4+EF8	SCREW
	21	XYE3+EJ10	SCREW
⚠	31	M51KYY140X	PICTURE TUBE
	32	TNP800962-21	PC BOARD W/COMPONENT (VIDEO-INPUT/CRT)
	33	TNP800963-21	PC BOARD W/COMPONENT (H-OUT/KBD/SW/LED)
⚠	34	TNP890532-21	PC BOARD W/COMPONENT (MAIN)
⚠	35	MEY6951THB2	DEFLECTION YOKE
	36	ETC33D53NA	CONVERGENCE COIL
	37	TLK858007T	TILT COIL
⚠	38	TLK859096A3	DEGAUSS COIL
⚠		TSX8436-1	POWER CORD<-A,-E>
⚠		TSX8471-1	POWER CORD<-M>
		TSX9571-3	SIGNAL CORD
		TSX9574-1	1P CONNECTOR CORD
	39	TSX9577	FLAT CORD(11P)

	Ref.No.	Part No.	Description
	40	TSX9578	FLAT CORD(9P)
	41	TSX9803	FLAT CORD(7P)
	42	TSX9990	FLAT CORD(25P)
		TXAJTC3P1658	3P CONNECTOR ASSY
		TXAJTC3P1659	3P CONNECTOR ASSY
		TXAJTV3P1657	3P CONNECTOR ASSY
	43	TXA3A12151NM	CRT EARTH LEAD
		TSN85511	MAGNET
		T4F31519Q	POLYESTER TAPE(20M)
		T4F72425Q	COTTON TAPE(55M)
		T4F90226-2	MAIRA TAPE(30M)
		TPC8842402	OUTER CARTON
		TPD353002	PAD
		TXAPD2D2131	FILLER
		TPE894011	SET COVER
		TQE8513	FUN BAG COVER
⚠		TQB820256-1	INSTRUCTION BOOK
		TQF80720	NHW LABEL
		TQF82880	HIGH VOLTAGE LABEL
		TQF83825-6	SERIAL NO. LABEL
		TQF85363-1	CARTON LABEL<-M>
		TQF85363-5	CARTON LABEL<-A>
		TQF85363-8	CARTON LABEL<-E>
		TQF86574	US PATENTS LABEL
⚠		TQF86608	EARTH CAUTION LABEL
		TQF86621	BAR CODE LABEL
		TQF86634	PTB LABEL(INNER)
		I.C	
	IC101	LM324MX	IC
	IC201	M52346SP	IC
	IC203	MM74HCT00MX	IC
	IC204	MM74HC00MX	IC
	IC301	TVS1093	IC
	IC302	LM837MX	IC
	IC330	LM358MX	IC
	IC351	LM324MX	IC
	IC459	MB88346BPFTF	IC
	IC460	AN5262	IC
	IC461	AN5262	IC
	IC462	BX8318A	HYBRID IC
	IC470	LM358MX	IC
	IC476	LM358MX	IC
	IC490	LA7838	IC
	IC501	LA7860	IC
	IC502	MB88346BPFTF	IC
	IC503	LM324MX	IC
	IC550	AN6531	IC
	IC581	LM358MX	IC
	IC635	LM339MX	IC
	IC660	TVS1103	IC
	IC751	MB88346BPFTF	IC
	IC761	AN5766K-A	IC
	IC820	STR-S6533	HYBRID IC
	IC850	TVS1103	IC
	IC870	M5F7824L	IC
	IC871	SI-3120CA	HYBRID IC
	IC872	M5F7805L	IC
	IC873	SI-3240CA	HYBRID IC
	IC874	STR-S3081	HYBRID IC
	IC875	SI-3090C	HYBRID IC
	IC876	L78LR05C	IC

	Ref.No.	Part No.	Description
	IC877	SI-3025F	HYBRID IC
	IC901	TVC80218-1	IC
	IC902	24LC08BTISN	IC
	IC904	EXBF5E563J	RR COMBINATION
	IC1301	M52326SP	IC
	IC1302	VEY09P-Y2	HYBRID IC
	IC1303	LM324MX	IC
	IC1304	LM2931CMX	IC
	IC1305	MC141540P4	IC
	IC1306	MB88346BPFTF	IC
	IC1308	MM74HC4066MX	IC
	IC1385	STK190-050	HYBRID IC
		TRANSISTORS	
	Q101	2SD1994AR	TRANSISTOR
	Q102	2SB1322AR	TRANSISTOR
	Q103	2SD1994AR	TRANSISTOR
	Q104	2SB1322AR	TRANSISTOR
	Q250	XDC114EU	TRANSISTOR
	Q251	XDA114EU	TRANSISTOR
	Q260	XDA114EU	TRANSISTOR
	Q261	XDC114EU	TRANSISTOR
	Q295	2SC4632RB7LB	TRANSISTOR
	Q299	2SC3938R	TRANSISTOR
	Q301	2SD1819AQ	TRANSISTOR
	Q302	2SD1819AQ	TRANSISTOR
	Q304	2SC4943RB7LB	TRANSISTOR
	Q305	2SA1872RB7LB	TRANSISTOR
	Q306	2SA1872RB7LB	TRANSISTOR
	Q307	2SC4943RB7LB	TRANSISTOR
	Q319	2SC4620V25	TRANSISTOR
	Q321	XDC114EU	TRANSISTOR
	Q330	2SB1220R	TRANSISTOR
	Q331	2SB1220R	TRANSISTOR
	Q332	XDC114EU	TRANSISTOR
	Q401	XDC114EU	TRANSISTOR
	Q442	2SC3938R	TRANSISTOR
	Q449	XDC114EU	TRANSISTOR
	Q470	2SD1819AQ	TRANSISTOR
	Q472	2SD1819AQ	TRANSISTOR
	Q484	2SD1819AQ	TRANSISTOR
	Q494	2SD1994AQ	TRANSISTOR
	Q495	2SB1413R	TRANSISTOR
	Q549	2SK2015	TRANSISTOR
	Q550	2SC4288ARL	TRANSISTOR
	Q560	XDC114EU	TRANSISTOR
	Q561	2SK2255F122	TRANSISTOR
	Q562	XDC114EU	TRANSISTOR
	Q563	2SK2255F122	TRANSISTOR
	Q564	XDC114EU	TRANSISTOR
	Q565	2SK2255F122	TRANSISTOR
	Q571	2SD1819AQ	TRANSISTOR
	Q581	2SB1546P	TRANSISTOR
	Q582	2SB1546P	TRANSISTOR
	Q583	2SC4212H	TRANSISTOR
	Q584	2SD2133S	TRANSISTOR
	Q585	2SB1413S	TRANSISTOR
	Q630	2SC3938R	TRANSISTOR
	Q644	2SD1820AR	TRANSISTOR
	Q645	2SB1219Q	TRANSISTOR
	Q672	2SC3938R	TRANSISTOR
	Q673	XDC114EU	TRANSISTOR

Ref.No.	Part No.	Description
Q674	2SC4212H	TRANSISTOR
Q675	2SD874AR	TRANSISTOR
Q676	2SB766AQ	TRANSISTOR
Q680	IRFI634G	TRANSISTOR
Q690	IRFPF50	TRANSISTOR
Q717	2SC1473QNC	TRANSISTOR
Q719	2SD1641	TRANSISTOR
Q762	XDC114EU	TRANSISTOR
Q805	2SB1220R	TRANSISTOR
Q809	2SC3938R	TRANSISTOR
Q810	2SD814AQ	TRANSISTOR
Q811	XDC114EU	TRANSISTOR
Q812	XDC114EU	TRANSISTOR
Q813	XDC114EU	TRANSISTOR
Q814	XDC114EU	TRANSISTOR
Q815	2SB1220R	TRANSISTOR
Q816	XDC114EU	TRANSISTOR
Q820	2SC4620V25	TRANSISTOR
Q821	2SD1992AR	TRANSISTOR
Q822	2SC4620V25	TRANSISTOR
Q823	2SD814AQ	TRANSISTOR
Q824	2SD1820AR	TRANSISTOR
Q825	2SB1220R	TRANSISTOR
Q850	2SC4212H	TRANSISTOR
Q851	2SD874AR	TRANSISTOR
Q852	2SB766AQ	TRANSISTOR
Q853	IRFI634G	TRANSISTOR
Q854	2SC3938R	TRANSISTOR
Q855	XDC114EU	TRANSISTOR
Q856	XDC114EU	TRANSISTOR
Q857	XDC114EU	TRANSISTOR
Q901	XDA114EU	TRANSISTOR
Q902	XDA114EU	TRANSISTOR
Q903	XDC114EU	TRANSISTOR
Q1001	2SC4453	TRANSISTOR
Q1002	2SC3938R	TRANSISTOR
Q1004	2SC4453	TRANSISTOR
Q1005	2SA1764	TRANSISTOR
Q1008	2SC3938R	TRANSISTOR
Q1075	2SC1473QNC	TRANSISTOR
Q1101	2SC4453	TRANSISTOR
Q1102	2SC3938R	TRANSISTOR
Q1104	2SC4453	TRANSISTOR
Q1105	2SA1764	TRANSISTOR
Q1108	2SC3938R	TRANSISTOR
Q1175	2SC1473QNC	TRANSISTOR
Q1201	2SC4453	TRANSISTOR
Q1202	2SC3938R	TRANSISTOR
Q1204	2SC4453	TRANSISTOR
Q1205	2SA1764	TRANSISTOR
Q1208	2SC3938R	TRANSISTOR
Q1275	2SC1473QNC	TRANSISTOR
Q1301	XDC114EU	TRANSISTOR
Q1302	XDC114EU	TRANSISTOR
Q1303	2SC3938R	TRANSISTOR
Q1304	XDC114EU	TRANSISTOR
Q1340	2SA1764	TRANSISTOR
Q1381	XDA114EU	TRANSISTOR
Q1390	2SA1309AQ	TRANSISTOR
Q1391	XDA114EU	TRANSISTOR
Q1392	XDC114EU	TRANSISTOR

Ref.No.	Part No.	Description
	DIODES	
D204	MA142K	DIODE
D205	MA8056M	DIODE
D207	MA8051M	DIODE
D242	MA8056M	DIODE
D243	MA142K	DIODE
D245	MA142K	DIODE
D246	MA142K	DIODE
D247	MA142K	DIODE
D250	MA8056M	DIODE
D251	MA8056M	DIODE
D252	MA8056M	DIODE
D253	MA8056M	DIODE
D254	MA8056M	DIODE
D255	MA111	DIODE
D256	MA8047M	DIODE
D302	MA8082L	DIODE
D303	MA142K	DIODE
D304	MA111	DIODE
D330	HZT33-09TD	DIODE
D331	HZT33-09TD	DIODE
D334	MA28T-A	DIODE
D337	EU02Z	DIODE
D338	EU02Z	DIODE
D353	MA8150M	DIODE
D371	MA8062L	DIODE
D381	TAX125X103MA	VARISTOR
D382	ERZC05DK201U	VARISTOR
D441	MA111	DIODE
D443	MA8270M	DIODE
D445	MA111	DIODE
D446	MA111	DIODE
D447	MA111	DIODE
D449	MA8056M	DIODE
D482	MA728	DIODE
D485	TVSRD18EB2	DIODE
D486	ERA1502	DIODE
D488	TVSRD10FB2	DIODE
D489	MA1360M	DIODE
D497	MA30WA	DIODE
D502	MA728	DIODE
D539	MA8047M	DIODE
D550	FMP-G3FSLF	DIODE
D551	ERA81004	DIODE
D552	MA111	DIODE
D553	MA8150M	DIODE
D571	MA111	DIODE
D581	MA142K	DIODE
D601	RU1P	DIODE
D602	MA167	DIODE
D604	EU02Z	DIODE
D606	MA111	DIODE
D608	RU1P	DIODE
D610	RD82P	DIODE
D611	RD82P	DIODE
D635	MA8150M	DIODE
D652	MA8051M	DIODE
D661	MA8150M	DIODE
D662	MA8130H	DIODE
D666	MA111	DIODE
D667	MA111	DIODE

Ref.No.	Part No.	Description
D668	MA111	DIODE
D669	MA111	DIODE
D672	MA30A	DIODE
D674	ERA18-04	DIODE
D680	MA8150M	DIODE
D681	CB903-4	DIODE
D690	MA8200H	DIODE
D695	MA4130H	DIODE
D714	MA142K	DIODE
D715	MA143A	DIODE
D716	MA142K	DIODE
D717	MA28T-A	DIODE
D719	EM01Z	DIODE
⚠ D801	ERZVEAV431	VARISTOR
⚠ D803	ERZVEAV431	VARISTOR
D804	SM3JZ47LB181	DIODE
D807	EG01Z	DIODE
D808	RBV406M	DIODE
D809	MA111	DIODE
D810	MA8240M	DIODE
D817	MA8200L	DIODE
D821	RG2A2	DIODE
D840	ERB93-02	DIODE
D841	ESAC39M06ES	DIODE
D842	ERC3806	DIODE
D843	CB903-4	DIODE
D844	RL4Z	DIODE
D845	ERC9102L	DIODE
D846	MA8068M	DIODE
D847	MA8220L	DIODE
D850	MA111	DIODE
D851	MA111	DIODE
D852	MA111	DIODE
D853	ERA18-04	DIODE
D854	MA30A	DIODE
D855	MA8150M	DIODE
D856	CB903-4	DIODE
D857	MA8075H	DIODE
D871	MA8360M	DIODE
D872	MA8360M	DIODE
D873	MA8360M	DIODE
D874	MA8360H	DIODE
D875	MA8360H	DIODE
D876	MA8360H	DIODE
D877	MA8150M	DIODE
D901	MA111	DIODE
D902	MA8047M	DIODE
D905	MA8056M	DIODE
D907	MA8056M	DIODE
D912	MA8056M	DIODE
D913	MA8056M	DIODE
D914	MA8056M	DIODE
D915	MA8056M	DIODE
D940	GL8ED5	DIODE(LED)
D941	1SS133	DIODE
D942	1SS133	DIODE
D946	MA142WK	DIODE
D947	MA8056M	DIODE
D950	MA8056M	DIODE
D951	MA8056M	DIODE
D953	MA8056M	DIODE
D954	MA8056M	DIODE
D955	MA8056M	DIODE
D956	MA8056M	DIODE
D957	MA8056M	DIODE
D958	MA8056M	DIODE
D960	MA8056M	DIODE
D961	MA8056M	DIODE
D962	MA8056M	DIODE
D963	MA8056M	DIODE
D1001	DCC010	DIODE
D1006	MA199	DIODE
D1007	MA199	DIODE
D1008	MA147	DIODE
D1054	MA142K	DIODE
D1055	MA142K	DIODE
D1057	MA142K	DIODE
D1058	MA142K	DIODE
D1064	MA142K	DIODE
D1066	MA142K	DIODE
D1075	MA167A	DIODE
D1101	DCC010	DIODE
D1106	MA199	DIODE
D1107	MA199	DIODE
D1108	MA147	DIODE
D1154	MA142K	DIODE
D1155	MA142K	DIODE
D1157	MA142K	DIODE
D1158	MA142K	DIODE
D1164	MA142K	DIODE
D1166	MA142K	DIODE
D1175	MA167A	DIODE
D1201	DCC010	DIODE
D1206	MA199	DIODE
D1207	MA199	DIODE
D1208	MA147	DIODE
D1254	MA142K	DIODE
D1255	MA142K	DIODE
D1257	MA142K	DIODE
D1258	MA142K	DIODE
D1264	MA142K	DIODE
D1266	MA142K	DIODE
D1275	MA167A	DIODE
D1303	MA8056M	DIODE
D1304	MA8056M	DIODE
D1305	MA8056M	DIODE
D1306	MA8056M	DIODE
D1307	MA8056M	DIODE
D1311	MA8056M	DIODE
D1340	MA8082L	DIODE
D1380	HZT33-09TD	DIODE
D1381	HZT33-09TD	DIODE
D1382	HZT33-09TD	DIODE
D1383	HZT22	DIODE
D1385	MA4082NM	DIODE
D1386	MA8150M	DIODE
D1395	MA4082NM	DIODE
D1401	MA111	DIODE
D1402	MA704	DIODE
	COIL & TRANSFORMERS	
L381	TSK8029	FERRITE CORE
L383	TSK8029	FERRITE CORE

Ref.No.	Part No.	Description			
L464	ELEY561KA	PEAKING COIL			
L521	ELEY470KA	PEAKING COIL			
L550	EXCELSR35S	LC COMBINATION			
L551	EXCELSR35S	LC COMBINATION			
L573	ELHKLB0148	COIL			
L574	ELHKLB0148	COIL			
L575	TLH85815T	COIL			
L599	TLUACNB821K	PEAKING COIL			
L680	EXCELDR35C	LC COMBINATION			
L681	TLP85708R	CHOKE COIL			
L751	ELEY561KA	PEAKING COIL			
⚠ L801	ELF18D650C	LINE FILTER			
⚠ L802	ELF18D656Z	LINE FILTER			
L806	TSK8031	FERRITE CORE			
L821	EXCELDR35C	LC COMBINATION			
L822	EXCELDR35C	LC COMBINATION			
L823	EXCELDR35C	LC COMBINATION			
L824	EXCELDR35C	LC COMBINATION			
L840	EXCELDR35C	LC COMBINATION			
L844	EXCELDR35C	LC COMBINATION			
L845	EXCELDR35C	LC COMBINATION			
L850	TLP85708R	CHOKE COIL			
L851	EXCELDR35C	LC COMBINATION			
L852	EXCELDR35C	LC COMBINATION			
L853	EXCELDR35C	LC COMBINATION			
L1001	ELEXHR47KA	PEAKING COIL			
L1051	TSK8031	FERRITE CORE			
L1061	TSK8031	FERRITE CORE			
L1101	ELEXHR47KA	PEAKING COIL			
L1102	ELJNAR22KB	CHIP COIL			
L1151	TSK8031	FERRITE CORE			
L1161	TSK8031	FERRITE CORE			
L1175	TSK8029	FERRITE CORE			
L1201	ELEXHR47KA	PEAKING COIL			
L1251	TSK8031	FERRITE CORE			
L1261	TSK8031	FERRITE CORE			
L1301	ELEXH100KA	PEAKING COIL			
L1302	TLUACNB821K	PEAKING COIL			
L1303	EXCELDR35C	LC COMBINATION			
L1304	EXCELDR35C	LC COMBINATION			
L1305	EXCELDR35C	LC COMBINATION			
L1306	TSK8029	FERRITE CORE			
L1308	ELEXH151KA	PEAKING COIL			
T541	TLH85407Z	COIL			
T542	TLH85501Z1	COIL			
⚠ T601	ETF42L28AZ	FLYBACK TRANS.			
⚠ T801	ETS42AF135ND	TRANS.			
	CAPACITORS				
C101	ECUX1H103KBG	C	0.01UF	K	50V
C106	ECUX1E334ZFW	C	0.33UF	Z	25V
C107	ECEA1HGE4R7	E	4.7UF		50V
C108	ECEA1HGE4R7	E	4.7UF		50V
C112	ECUX1E334ZFW	C	0.33UF	Z	25V
C201	ECQV1H474JM	P	0.47UF	J	50V
C202	ECEA1HGE010	E	1UF		50V
C203	ECEA1HGE010	E	1UF		50V
C204	ECUX1H472KBG	C	4700PF	K	50V
C205	ECUX1H103KBG	C	0.01UF	K	50V
C207	ECEA1HGE2R2	E	2.2UF		50V
C208	ECEA1HGE2R2	E	2.2UF		50V
C209	ECUX1H333KBX	C	0.033UF	K	50V

Ref.No.	Part No.	Description			
C210	ECUX1H102KBN	C	1000PF	K	50V
C211	ECUX1H102KBN	C	1000PF	K	50V
C212	ECEA1CGE101	E	100UF		16V
C213	ECUX1H102KBN	C	1000PF	K	50V
C214	ECQV1H474JM	P	0.47UF	J	50V
C215	ECEA1CGE101	E	100UF		16V
C242	ECUX1H103KBG	C	0.01UF	K	50V
C243	ECUX1H103KBG	C	0.01UF	K	50V
C244	ECUX1H103KBG	C	0.01UF	K	50V
C298	ECEA1CGE470	E	47UF		16V
C299	ECUX1H103KBG	C	0.01UF	K	50V
C306	ECEA1CGE470	E	47UF		16V
C308	ECUX1H103KBG	C	0.01UF	K	50V
C309	ECUX1H103KBG	C	0.01UF	K	50V
C318	ECKD2H151KB5	C	150PF	K	500V
C319	ECQV1H473JM	P	0.047UF	J	50V
C321	ECUX1H104ZFX	C	0.1UF	Z	50V
C322	ECYX1H332JCW	C	3300PF	J	50V
C323	ECKD3A102JBP	C	1000PF	J	1KV
C325	ECKF1H103ZF	C	0.01UF	Z	50V
C326	ECUX1H103KBG	C	0.01UF	K	50V
C327	ECCF1H150JC	C	15PF	J	50V
C328	ECUX1H103KBG	C	0.01UF	K	50V
C329	ECEA1HGE100	E	10UF		50V
C330	ECEA1HGE2R2	E	2.2UF		50V
C331	ECUX1H104ZFX	C	0.1UF	Z	50V
C337	ECUX1H101JCG	C	100PF	J	50V
C339	ECQE2104KF	P	0.1UF	K	200V
C351	ECUX1H103KBG	C	0.01UF	K	50V
C370	ECUX1H103KBG	C	0.01UF	K	50V
C371	ECEA1CGE101	E	100UF		16V
C372	ECQB1H223JF	P	0.022UF	J	50V
C373	ECQB1H333JF	P	0.033UF	J	50V
C374	ECQV1H394JM	P	0.39UF	J	50V
C375	ECEA1CGE330	E	33UF		16V
C376	ECQV1H154JM	P	0.15UF	J	50V
C377	ECUX1H560JCG	C	56PF	J	50V
C378	ECEA1EGN330	E	33UF		25V
C379	ECEA1HGE010	E	1UF		50V
C380	ECUX1H820JCG	C	82PF	J	50V
C381	ECUX1H330JCG	C	33PF	J	50V
C382	ECUX1H103KBG	C	0.01UF	K	50V
C383	ECEA1HGE010	E	1UF		50V
C384	ECUX1H560JCG	C	56PF	J	50V
C385	ECQB1H563JF	P	0.056UF	J	50V
C387	ECUX1H103KBG	C	0.01UF	K	50V
C388	ECUX1H103KBG	C	0.01UF	K	50V
C390	ECKD2H101KB5	C	100PF	K	500V
C391	ECEA1HGE100	E	10UF		50V
C392	ECUX1H102JCX	C	1000PF	J	50V
C393	ECKD3D272KBP	C	2700PF	K	2KV
C394	ECQE10473KF	P	0.047UF	K	1KV
C395	ECUX1H102KBN	C	1000PF	K	50V
C401	ECUX1H220JCN	C	22PF	J	50V
C402	ECEA1HGE010	E	1UF		50V
C403	ECQV1H104JM	P	0.1UF	J	50V
C404	ECQB1H123JF	P	0.012UF	J	50V
C405	ECUX1H102KBN	C	1000PF	K	50V
C442	ECUX1H221KBN	C	220PF	K	50V
C459	ECEA0JGE471	E	470UF		6.3V
C460	ECEA1CGE470	E	47UF		16V
C461	ECEA1HGE330	E	33UF		50V

Ref.No.	Part No.	Description			
C462	ECEA1HGE330	E	33UF		50V
C463	ECEA1HGE330	E	33UF		50V
C464	ECEA1CGE330	E	33UF		16V
C465	ECUX1H222KBN	C	2200PF	K	50V
C466	ECEA1CGE330	E	33UF		16V
C467	ECA1VEN330	E	33UF		35V
C468	ECEA1CGE100	E	10UF		16V
C469	ECEA1CGE470	E	47UF		16V
C470	ECUX1H103KBG	C	0.01UF	K	50V
C471	ECUX1H103KBG	C	0.01UF	K	50V
C476	ECUX1H103KBG	C	0.01UF	K	50V
C479	ECEA1AGE101	E	100UF		10V
C480	ECEA1CGE471	E	470UF		16V
C482	ECEA1VGE4R7	E	4.7UF		35V
C483	ECQV1H124JM	P	0.12UF	J	50V
C484	ECHU1H473JB9	P	0.047UF	J	50V
C485	ECEA1HGE222	E	2200UF		50V
C488	ECQV1J183JM	P	0.018UF	J	63V
C490	ECA1EXS330	E	33UF		25V
C491	ECEA1VGE222	E	2200UF		35V
C492	ECA1HFQ101	E	100UF		50V
C497	ECEA1VGE101	E	100UF		35V
C498	ECEA1VGE101	E	100UF		35V
C501	ECUX1H470JCG	C	47PF	J	50V
C502	ECUX1H103KBG	C	0.01UF	K	50V
C504	ECUX1H103KBG	C	0.01UF	K	50V
C506	ECUX1H103KBG	C	0.01UF	K	50V
C507	ECEA1HGN4R7	E	4.7UF		50V
C509	ECUX1H681JCX	C	680PF	J	50V
C510	ECYX1H122JCX	C	1200PF	J	50V
C511	ECEA1HGE4R7	E	4.7UF		50V
C512	ECUX1H271KBN	C	270PF	K	50V
C514	ECUX1H103KBG	C	0.01UF	K	50V
C515	ECHU1H122GB5	P	1200PF	G	50V
C516	ECUX1H151JCG	C	150PF	J	50V
C517	ECEA1HGE2R2	E	2.2UF		50V
C518	ECEA1HGE2R2	E	2.2UF		50V
C519	ECUX1H561JCX	C	560PF	J	50V
C520	ECEA1CGE102	E	1000UF		16V
C521	ECEA0JGE471	E	470UF		6.3V
C522	ECUX1H103KBG	C	0.01UF	K	50V
C523	ECUX1H103KBG	C	0.01UF	K	50V
C526	ECEA1HGE3R3	E	3.3UF		50V
C530	ECUX1H151JCG	C	150PF	J	50V
C531	ECUX1H103KBG	C	0.01UF	K	50V
C532	ECEA1CGE101	E	100UF		16V
C533	ECUX1H332KBN	C	3300PF	K	50V
C550	ECEA1VGE101	E	100UF		35V
C551	ECEA1VGE101	E	100UF		35V
C552	ECKD2H332KB5	C	3300PF	K	500V
C553	ECWH15H222HN	PP	2200PF	H	1.5KV
C554	ECWH15H222HN	PP	2200PF	H	1.5KV
C555	ECQE2335KF	P	3.3UF	K	200V
C561	ECWF2H125HDB	PP	1.2UF	H	500V
C563	ECWF2H364HDB	PP	0.36UF	H	200V
C565	ECWF2H184HDP	PP	0.18UF	H	500V
C568	ECWF4304HBP	PP	0.3UF	H	400V
C573	ECKD2H102KB5	C	1000PF	K	500V
C574	ECKD2H102KB5	C	1000PF	K	500V
C575	ECUX1C474ZFX	C	0.47UF	Z	16V
C576	ECUX1C474ZFX	C	0.47UF	Z	16V
C577	ECUX1C474ZFX	C	0.47UF	Z	16V

Ref.No.	Part No.	Description			
C580	ECEA1EGE101	E	100UF		25V
C581	ECQE2224KF	P	0.22UF	K	200V
C582	ECUX1H103KBG	C	0.01UF	K	50V
C583	ECUX1C105ZFW	C	1.0UF	Z	16V
C584	ECUX1C105ZFW	C	1.0UF	Z	16V
C599	ECEA1HGN100	E	10UF		50V
C601	ECEA2AGE220	E	22UF		100V
C603	ECEA2CGE220	E	22UF		160V
C604	ECEA1HGE010	E	1UF		50V
C605	ECEA2EGE3R3	E	3.3UF		250V
C606	ECEA2GGE4R7	E	4.7UF		400V
C609	ECEA2CGE2R2	E	2.2UF		160V
C610	ECEA2GGE4R7	E	4.7UF		400V
C634	ECUX1H272KBN	C	2700PF	K	50V
C635	ECUX1H103KBG	C	0.01UF	K	50V
C638	ECUX1H103KBG	C	0.01UF	K	50V
C660	ECEA1VGE470	E	47UF		35V
C661	ECQB1H562JF	P	5600PF	J	50V
C662	ECUX1H104ZFX	C	0.1UF	Z	50V
C663	ECUX1H104ZFX	C	0.1UF	Z	50V
C664	ECUX1H102JCX	C	1000PF	J	50V
C665	ECUX1H121JCG	C	120PF	J	50V
C666	ECUX1H102JCX	C	1000PF	J	50V
C667	ECUX1H221JCG	C	220PF	J	50V
C668	ECUX1H123KBX	C	0.012UF	K	50V
C672	ECA1VXS4R7	E	4.7UF		35V
C674	ECEA1VGE470	E	47UF		35V
C679	ECA1JFQ120	E	12UF		63V
C681	ECQE2335KF	P	3.3UF	K	200V
C685	ECKD3A221KBP	C	220PF	K	1KV
C686	ECKD3A221KBP	C	220PF	K	1KV
C690	ECWH12H222HS	PP	2200PF	H	1.2KV
C691	ECKD3D391JBP	C	390PF	J	2KV
C693	TACD1H471KBT	C	470PF	K	50V
C694	ECUX1H682KBG	C	6800PF	K	50V
C695	ECKD2H221KB5	C	220PF	K	500V
C696	ECQB1H102JF	P	1000PF	J	50V
C697	ECEA1HGE470	E	47UF		50V
C698	ECEA1HGE4R7	E	4.7UF		50V
C709	ECEA1HGN100	E	10UF		50V
C712	ECUX1H103KBG	C	0.01UF	K	50V
C715	ECEA2CGE4R7	E	4.7UF		160V
C718	ECUX1H103KBG	C	0.01UF	K	50V
C719	ECQE2103KF	P	0.01UF	K	200V
C720	ECQE2103KF	P	0.01UF	K	200V
C752	ECUX1H103KBG	C	0.01UF	K	50V
C754	ECEA0JGE471	E	470UF		6.3V
C755	ECEA1CGE100	E	10UF		16V
C770	ECEA1HGE330	E	33UF		50V
C772	ECUX1C105ZFW	C	1.0UF	Z	16V
C773	ECEA1HGN4R7	E	4.7UF		50V
C774	ECA1HXSR47	E	0.47UF		50V
C775	ECUX1H103KBG	C	0.01UF	K	50V
C776	ECEA1CGE101	E	100UF		16V
C777	ECEA1VGE470	E	47UF		35V
C799	ECEA1CGN470	E	47UF		16V
⚠ C801	ECQU2A105MVZ	PP	1.0UF	M	250V
⚠ C802	ECKDRS222ME	C	2200PF	M	
⚠ C803	ECKDRS222ME	C	2200PF	M	
⚠ C805	ECQU2A105MVZ	PP	1.0UF	M	250V
C814	ECWF4105JZ	PP	1.0UF	J	400V
C815	ECQE4104JF	P	0.1UF	J	400V

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
C819	ECKD3A101KBP	C	100PF	K	1KV	C911	ECUX1H221KBN	C	220PF	K	50V
C820	ECUX1H223KBX	C	0.022UF	K	50V	C912	ECUX1H333KBX	C	0.033UF	K	50V
C821	ECQE6473KF	P	0.047UF	K	600V	C1002	ECEA1CGE470	E	47UF		16V
C822	ECUX1H222KBN	C	2200PF	K	50V	C1003	ECUX1H103KBG	C	0.01UF	K	50V
C823	ECEA1HGE4R7	E	4.7UF		50V	C1004	ECUX1H103KBG	C	0.01UF	K	50V
C824	ECEA1HGE100	E	10UF		50V	C1005	ECQV1H105JM	P	1.0UF	J	50V
C825	ECEA1HGE3R3	E	3.3UF		50V	C1006	ECUX1H750JCG	C	75PF	J	50V
C827	ECUX1H681KBN	C	680PF	K	50V	C1008	ECEA2DGE100	E	10UF		200V
C828	ECEA1HGE470	E	47UF		50V	C1009	ECUX1H103KBG	C	0.01UF	K	50V
C829	ECEA1VGE221	E	220UF		35V	C1010	ECKD2H102KB5	C	1000PF	K	500V
⚠ C831	ECKDRS472ME	C	4700PF	M		C1013	ECUX1H390JCG	C	39PF	J	50V
⚠ C832	ECKDRS472ME	C	4700PF	M		C1014	ECQV1474JZ	P	0.47UF	J	100V
C839	ECEA0JGE102	E	1000UF		6.3V	C1015	TACCG681P200	C	680PF		200V
C840	ECEA1HGE4R7	E	4.7UF		50V	C1030	ECUX1H220JCN	C	22PF	J	50V
C841	ECUX1C105ZFW	C	1.0UF	Z	16V	C1040	ECUX1C105ZFW	C	1.0UF	Z	16V
C842	ECKD3D151JBP	C	150PF	J	2KV	C1050	ECUX1H050CCN	C	5PF	C	50V
C843	ECEA1CGE470	E	47UF		16V	C1051	ECUX1H102KBN	C	1000PF	K	50V
C844	ECA2CGE221W	E	220UF		160V	C1052	ECEA0JKG221Q	E	220UF		6.3V
C853	ECQE1224KF	P	0.22UF	K	100V	C1059	ECEA1CKG470	E	47UF		16V
C861	ECOS2DB102CB	E	1000UF		200V	C1060	ECUX1H050CCN	C	5PF	C	50V
C862	ECOS2CA331AB	E	330UF		160V	C1061	ECUX1H102KBN	C	1000PF	K	50V
C863	ECEA1HGE222	E	2200UF		50V	C1062	ECEA0JKG221Q	E	220UF		6.3V
C864	ECOS1EA562AB	E	5600UF		25V	C1068	ECUX1H102KBN	C	1000PF	K	50V
C865	ECA1CFQ222L	E	2200UF		16V	C1075	ECEA2CGE010	E	1UF		160V
C866	ECA1CXL101	E	100UF		16V	C1077	ECQE2104JF	P	0.1UF	J	200V
C867	ECA1EFQ102	E	1000UF		25V	C1085	ECUX1H103KBG	C	0.01UF	K	50V
C868	ECKD2H222KB5	C	2200PF	K	500V	C1102	ECEA1CGE470	E	47UF		16V
C870	ECA1HFQ101	E	100UF		50V	C1103	ECUX1H103KBG	C	0.01UF	K	50V
C871	ECEA1HGE221	E	220UF		50V	C1104	ECUX1H103KBG	C	0.01UF	K	50V
C872	ECEA1AGE102	E	1000UF		10V	C1105	ECQV1H105JM	P	1.0UF	J	50V
C873	ECUX1H104ZFX	C	0.1UF	Z	50V	C1106	ECUX1H910JC	C	91PF	J	50V
C874	ECUX1H104ZFX	C	0.1UF	Z	50V	C1108	ECEA2DGE100	E	10UF		200V
C875	ECA1CXLV331	E	330UF		16V	C1109	ECUX1H103KBG	C	0.01UF	K	50V
C876	ECEA1HGE221	E	220UF		50V	C1110	ECKD2H102KB5	C	1000PF	K	500V
C877	ECUX1H104ZFX	C	0.1UF	Z	50V	C1113	ECUX1H390JCG	C	39PF	J	50V
C878	ECEA2DGE470	E	47UF		200V	C1114	ECQV1474JZ	P	0.47UF	J	100V
C879	ECEA1AGE102	E	1000UF		10V	C1115	TACCG681P200	C	680PF		200V
C880	ECUX1H121JCG	C	120PF	J	50V	C1130	ECUX1H220JCN	C	22PF	J	50V
C881	ECUX1H102JCX	C	1000PF	J	50V	C1140	ECUX1C105ZFW	C	1.0UF	Z	16V
C882	ECUX1H221JCG	C	220PF	J	50V	C1150	ECUX1H050CCN	C	5PF	C	50V
C883	ECEA1EGE470	E	47UF		25V	C1151	ECUX1H102KBN	C	1000PF	K	50V
C884	ECUX1H222KBN	C	2200PF	K	50V	C1152	ECEA0JKG221Q	E	220UF		6.3V
C855	ECKD2H272KB5	C	2700PF	K	500V	C1159	ECEA1CKG470	E	47UF		16V
C886	ECEA1HGE470	E	47UF		50V	C1160	ECUX1H050CCN	C	5PF	C	50V
C887	ECA1VXS4R7	E	4.7UF		35V	C1161	ECUX1H102KBN	C	1000PF	K	50V
C888	ECEA2AGE100	E	10UF		100V	C1162	ECEA0JKG221Q	E	220UF		6.3V
C889	ECA2DGE680Y	E	68UF		200V	C1168	ECUX1H102KBN	C	1000PF	K	50V
C891	ECQE4103KF	P	0.01UF	K	400V	C1175	ECEA2CGE010	E	1UF		160V
C892	ECKD3D151JBP	C	150PF	J	2KV	C1177	ECQE2104JF	P	0.1UF	J	200V
C893	ECUX1H104ZFX	C	0.1UF	Z	50V	C1185	ECUX1H103KBG	C	0.01UF	K	50V
C895	ECEA1HGE010	E	1UF		50V	C1202	ECEA1CGE470	E	47UF		16V
C896	ECUX1H103KBG	C	0.01UF	K	50V	C1203	ECUX1H103KBG	C	0.01UF	K	50V
C901	ECUX1H220JCN	C	22PF	J	50V	C1204	ECUX1H103KBG	C	0.01UF	K	50V
C902	ECEA1AGE101	E	100UF		10V	C1205	ECQV1H105JM	P	1.0UF	J	50V
C903	ECUX1H103KBG	C	0.01UF	K	50V	C1206	ECUX1H820JCG	C	82PF	J	50V
C904	ECUX1H103KBG	C	0.01UF	K	50V	C1209	ECUX1H103KBG	C	0.01UF	K	50V
C905	ECUX1H103KBG	C	0.01UF	K	50V	C1210	ECKD2H102KB5	C	1000PF	K	500V
C906	ECUX1H103KBG	C	0.01UF	K	50V	C1213	ECUX1H390JCG	C	39PF	J	50V
C907	ECUX1H221KBN	C	220PF	K	50V	C1214	ECQV1474JZ	P	0.47UF	J	100V
C908	ECUX1H150JCN	C	15PF	J	50V	C1215	TACCG681P200	C	680PF		200V
C909	ECUX1H150JCN	C	15PF	J	50V	C1230	ECUX1H220JCN	C	22PF	J	50V
C910	ECUX1H221KBN	C	220PF	K	50V	C1240	ECUX1C105ZFW	C	1.0UF	Z	16V

Ref.No.	Part No.	Description			
C1250	ECUX1H050CCN	C	5PF	C	50V
C1251	ECUX1H102KBN	C	1000PF	K	50V
C1252	ECEA0JKG221Q	E	220UF		6.3V
C1259	ECEA1CKG470	E	47UF		16V
C1260	ECUX1H050CCN	C	5PF	C	50V
C1261	ECUX1H102KBN	C	1000PF	K	50V
C1262	ECEA0JKG221Q	E	220UF		6.3V
C1268	ECUX1H102KBN	C	1000PF	K	50V
C1275	ECEA2CGE010	E	1UF		160V
C1277	ECQE2104JF	P	0.1UF	J	200V
C1285	ECUX1H103KBG	C	0.01UF	K	50V
C1301	ECEA1HGE100	E	10UF		50V
C1302	ECUX1H103KBG	C	0.01UF	K	50V
C1303	ECEA1CGE101	E	100UF		16V
C1304	ECEA1CGE102	E	1000UF		16V
C1305	ECQV1H474JM	P	0.47UF	J	50V
C1306	ECUX1C105ZFW	C	1.0UF	Z	16V
C1307	ECUX1H100DCN	C	10PF	D	50V
C1308	ECUX1H103KBG	C	0.01UF	K	50V
C1309	ECUX1H102KBN	C	1000PF	K	50V
C1310	ECEA2CGE470	E	47UF		160V
C1311	ECUX1H103KBG	C	0.01UF	K	50V
C1312	ECUX1C105ZFW	C	1.0UF	Z	16V
C1314	ECEA1CGE470	E	47UF		16V
C1315	ECUX1H103KBG	C	0.01UF	K	50V
C1316	ECUX1H103KBG	C	0.01UF	K	50V
C1318	ECUX1H103KBG	C	0.01UF	K	50V
C1319	ECEA1HGE100	E	10UF		50V
C1320	ECUX1H220JCN	C	22PF	J	50V
C1321	ECUX1H220JCN	C	22PF	J	50V
C1322	ECUX1H220JCN	C	22PF	J	50V
C1323	ECEA1AGE101	E	100UF		10V
C1324	ECUX1H220JCN	C	22PF	J	50V
C1325	ECEA1CGE101	E	100UF		16V
C1326	ECUX1H223KBX	C	0.022UF	K	50V
C1328	ECUX1H101JCG	C	100PF	J	50V
C1336	ECUX1H060DCN	C	6PF	D	50V
C1338	ECUX1H101JCG	C	100PF	J	50V
C1350	ECUX1H102KBN	C	1000PF	K	50V
C1351	ECUX1H102KBN	C	1000PF	K	50V
C1352	TACCG102P200	C	1000PF		200V
C1381	ECUX1H103KBG	C	0.01UF	K	50V
C1382	ECEA2DGE100	E	10UF		200V
C1383	TACCJ103P200	C	0.01UF		200V
C1385	ECUX1H103KBG	C	0.01UF	K	50V
C1386	TCUX2H101JCM	C	100PF	J	500V
C1391	ECUX1H103KBG	C	0.01UF	K	50V
C1395	ECKD2H332KB5	C	3300PF	K	500V
C1398	ECEA1HKG010	E	1UF		50V
C1399	ECEA1HKG010	E	1UF		50V
C1410	ECUX1C105ZFW	C	1.0UF	Z	16V
	RESISTORS				
J052	ERDS2TC0	C	0 OHM		1/4W
J053	ERDS2TC0	C	0 OHM		1/4W
J054	ERDS2TC0	C	0 OHM		1/4W
J055	ERDS2TC0	C	0 OHM		1/4W
J101	ERDS2TC0	C	0 OHM		1/4W
J112	ERDS2TC0	C	0 OHM		1/4W
J114	ERDS2TC0	C	0 OHM		1/4W
J119	ERDS2TC0	C	0 OHM		1/4W
J120	ERDS2TC0	C	0 OHM		1/4W
J121	ERDS2TC0	C	0 OHM		1/4W
J122	ERDS2TC0	C	0 OHM		1/4W
J123	ERDS2TC0	C	0 OHM		1/4W
J130	ERDS2TC0	C	0 OHM		1/4W
J131	ERDS2TC0	C	0 OHM		1/4W
J132	ERDS2TC0	C	0 OHM		1/4W
J133	ERDS2TC0	C	0 OHM		1/4W
J134	ERDS2TC0	C	0 OHM		1/4W
J135	ERDS2TC0	C	0 OHM		1/4W
J136	ERDS2TC0	C	0 OHM		1/4W
J138	ERDS2TC0	C	0 OHM		1/4W
J147	ERDS2TC0	C	0 OHM		1/4W
J149	ERDS2TC0	C	0 OHM		1/4W
J153	ERDS2TC0	C	0 OHM		1/4W
J200	ERJ8GCY0R00	M	0 OHM		1/8W
J201	ERD25TC0	C	0 OHM		1/4W
J201	ERJ8GCY0R00	M	0 OHM		1/8W
J202	ERD25TC0	C	0 OHM		1/4W
J202	ERJ8GCY0R00	M	0 OHM		1/8W
J203	ERD25TC0	C	0 OHM		1/4W
J203	ERJ8GCY0R00	M	0 OHM		1/8W
J204	ERD25TC0	C	0 OHM		1/4W
J204	ERJ8GCY0R00	M	0 OHM		1/8W
J205	ERD25TC0	C	0 OHM		1/4W
J205	ERJ8GCY0R00	M	0 OHM		1/8W
J206	ERD25TC0	C	0 OHM		1/4W
J206	ERJ8GCY0R00	M	0 OHM		1/8W
J207	ERJ8GCY0R00	M	0 OHM		1/8W
J208	ERJ8GCY0R00	M	0 OHM		1/8W
J209	ERJ8GCY0R00	M	0 OHM		1/8W
J210	ERD25TC0	C	0 OHM		1/4W
J210	ERJ8GCY0R00	M	0 OHM		1/8W
J211	ERJ8GCY0R00	M	0 OHM		1/8W
J212	ERD25TC0	C	0 OHM		1/4W
J212	ERJ8GCY0R00	M	0 OHM		1/8W
J213	ERJ8GCY0R00	M	0 OHM		1/8W
J214	ERJ8GCY0R00	M	0 OHM		1/8W
J215	ERJ8GCY0R00	M	0 OHM		1/8W
J216	ERD25TC0	C	0 OHM		1/4W
J216	ERJ8GCY0R00	M	0 OHM		1/8W
J217	ERD25TC0	C	0 OHM		1/4W
J217	ERJ8GCY0R00	M	0 OHM		1/8W
J218	ERJ8GCY0R00	M	0 OHM		1/8W
J219	ERD25TC0	C	0 OHM		1/4W
J219	ERJ8GCY0R00	M	0 OHM		1/8W
J220	ERJ8GCY0R00	M	0 OHM		1/8W
J221	ERD25TC0	C	0 OHM		1/4W
J221	ERJ8GCY0R00	M	0 OHM		1/8W
J222	ERD25TC0	C	0 OHM		1/4W
J222	ERJ8GCY0R00	M	0 OHM		1/8W
J223	ERD25TC0	C	0 OHM		1/4W
J223	ERJ8GCY0R00	M	0 OHM		1/8W
J224	ERJ8GCY0R00	M	0 OHM		1/8W
J225	ERD25TC0	C	0 OHM		1/4W
J225	ERJ8GCY0R00	M	0 OHM		1/8W
J226	ERJ8GCY0R00	M	0 OHM		1/8W
J229	ERD25TC0	C	0 OHM		1/4W
J230	ERD25TC0	C	0 OHM		1/4W
J231	ERD25TC0	C	0 OHM		1/4W
J232	ERD25TC0	C	0 OHM		1/4W
J233	ERD25TC0	C	0 OHM		1/4W
J234	ERD25TC0	C	0 OHM		1/4W

Ref.No.	Part No.		Description	
J235	ERD25TCO	C	0 OHM	1/4W
J236	ERD25TCO	C	0 OHM	1/4W
J237	ERD25TCO	C	0 OHM	1/4W
J238	ERD25TCO	C	0 OHM	1/4W
J239	ERD25TCO	C	0 OHM	1/4W
J240	ERD25TCO	C	0 OHM	1/4W
J241	ERD25TCO	C	0 OHM	1/4W
J242	ERD25TCO	C	0 OHM	1/4W
J243	ERD25TCO	C	0 OHM	1/4W
J244	ERD25TCO	C	0 OHM	1/4W
J246	ERD25TCO	C	0 OHM	1/4W
J247	ERD25TCO	C	0 OHM	1/4W
J248	ERD25TCO	C	0 OHM	1/4W
J250	ERD25TCO	C	0 OHM	1/4W
J250	ERJ6GEYOROO	M	0 OHM	1/10W
J251	ERD25TCO	C	0 OHM	1/4W
J251	ERJ6GEYOROO	M	0 OHM	1/10W
J252	ERD25TCO	C	0 OHM	1/4W
J252	ERJ6GEYOROO	M	0 OHM	1/10W
J253	ERJ6GEYOROO	M	0 OHM	1/10W
J255	ERD25TCO	C	0 OHM	1/4W
J258	ERD25TCO	C	0 OHM	1/4W
J260	ERD25TCO	C	0 OHM	1/4W
J261	ERD25TCO	C	0 OHM	1/4W
J264	ERD25TCO	C	0 OHM	1/4W
J265	ERD25TCO	C	0 OHM	1/4W
J268	ERD25TCO	C	0 OHM	1/4W
J271	ERD25TCO	C	0 OHM	1/4W
J272	ERD25TCO	C	0 OHM	1/4W
J273	ERD25TCO	C	0 OHM	1/4W
J274	ERD25TCO	C	0 OHM	1/4W
J276	ERD25TCO	C	0 OHM	1/4W
J280	ERD25TCO	C	0 OHM	1/4W
J301	ERD25TCO	C	0 OHM	1/4W
J302	ERD25TCO	C	0 OHM	1/4W
J303	ERD25TCO	C	0 OHM	1/4W
J304	ERD25TCO	C	0 OHM	1/4W
J307	ERD25TCO	C	0 OHM	1/4W
J311	ERD25TCO	C	0 OHM	1/4W
J313	ERD25TCO	C	0 OHM	1/4W
J318	ERD25TCO	C	0 OHM	1/4W
J322	ERD25TCO	C	0 OHM	1/4W
J326	ERD25TCO	C	0 OHM	1/4W
J401	ERJ8GCYOROO	M	0 OHM	1/8W
J402	ERJ8GCYOROO	M	0 OHM	1/8W
J403	ERJ8GCYOROO	M	0 OHM	1/8W
J404	ERJ8GCYOROO	M	0 OHM	1/8W
J405	ERJ8GCYOROO	M	0 OHM	1/8W
J406	ERJ8GCYOROO	M	0 OHM	1/8W
J407	ERJ8GCYOROO	M	0 OHM	1/8W
J408	ERJ8GCYOROO	M	0 OHM	1/8W
J409	ERJ8GCYOROO	M	0 OHM	1/8W
J410	ERJ8GCYOROO	M	0 OHM	1/8W
J411	ERJ8GCYOROO	M	0 OHM	1/8W
J412	ERJ8GCYOROO	M	0 OHM	1/8W
J413	ERJ8GCYOROO	M	0 OHM	1/8W
J414	ERJ8GCYOROO	M	0 OHM	1/8W
J415	ERJ8GCYOROO	M	0 OHM	1/8W
J417	ERJ8GCYOROO	M	0 OHM	1/8W
J418	ERJ8GCYOROO	M	0 OHM	1/8W
J419	ERJ8GCYOROO	M	0 OHM	1/8W
J420	ERJ8GCYOROO	M	0 OHM	1/8W
J421	ERJ8GCYOROO	M	0 OHM	1/8W
J422	ERJ8GCYOROO	M	0 OHM	1/8W
J423	ERJ8GCYOROO	M	0 OHM	1/8W
J424	ERJ8GCYOROO	M	0 OHM	1/8W
J425	ERJ8GCYOROO	M	0 OHM	1/8W
J426	ERJ6GEYOROO	M	0 OHM	1/10W
J427	ERJ8GCYOROO	M	0 OHM	1/8W
J428	ERJ8GCYOROO	M	0 OHM	1/8W
J429	ERJ8GCYOROO	M	0 OHM	1/8W
J430	ERJ8GCYOROO	M	0 OHM	1/8W
J431	ERJ8GCYOROO	M	0 OHM	1/8W
J432	ERJ8GCYOROO	M	0 OHM	1/8W
J433	ERJ8GCYOROO	M	0 OHM	1/8W
J434	ERJ8GCYOROO	M	0 OHM	1/8W
J435	ERJ8GCYOROO	M	0 OHM	1/8W
J436	ERJ8GCYOROO	M	0 OHM	1/8W
J437	ERJ8GCYOROO	M	0 OHM	1/8W
J438	ERJ8GCYOROO	M	0 OHM	1/8W
J439	ERJ8GCYOROO	M	0 OHM	1/8W
J440	ERJ8GCYOROO	M	0 OHM	1/8W
J441	ERJ8GCYOROO	M	0 OHM	1/8W
J442	ERJ8GCYOROO	M	0 OHM	1/8W
J443	ERJ8GCYOROO	M	0 OHM	1/8W
J444	ERJ8GCYOROO	M	0 OHM	1/8W
J445	ERJ8GCYOROO	M	0 OHM	1/8W
J446	ERJ8GCYOROO	M	0 OHM	1/8W
J447	ERJ8GCYOROO	M	0 OHM	1/8W
J448	ERJ8GCYOROO	M	0 OHM	1/8W
J449	ERJ8GCYOROO	M	0 OHM	1/8W
J450	ERJ8GCYOROO	M	0 OHM	1/8W
J451	ERJ6GEYOROO	M	0 OHM	1/10W
J452	ERJ6GEYOROO	M	0 OHM	1/10W
J454	ERJ6GEYOROO	M	0 OHM	1/10W
J455	ERJ6GEYOROO	M	0 OHM	1/10W
J456	ERJ6GEYOROO	M	0 OHM	1/10W
J460	ERJ6GEYOROO	M	0 OHM	1/10W
J461	ERJ6GEYOROO	M	0 OHM	1/10W
J462	ERJ6GEYOROO	M	0 OHM	1/10W
J463	ERJ6GEYOROO	M	0 OHM	1/10W
J465	ERJ6GEYOROO	M	0 OHM	1/10W
J466	ERJ6GEYOROO	M	0 OHM	1/10W
J467	ERJ6GEYOROO	M	0 OHM	1/10W
J469	ERJ6GEYOROO	M	0 OHM	1/10W
J470	ERJ6GEYOROO	M	0 OHM	1/10W
J471	ERJ6GEYOROO	M	0 OHM	1/10W
J472	ERJ6GEYOROO	M	0 OHM	1/10W
J473	ERJ6GEYOROO	M	0 OHM	1/10W
J474	ERJ6GEYOROO	M	0 OHM	1/10W
J475	ERJ6GEYOROO	M	0 OHM	1/10W
J476	ERJ6GEYOROO	M	0 OHM	1/10W
J478	ERJ6GEYOROO	M	0 OHM	1/10W
J479	ERJ6GEYOROO	M	0 OHM	1/10W
J480	ERJ6GEYOROO	M	0 OHM	1/10W
J481	ERJ6GEYOROO	M	0 OHM	1/10W
J482	ERJ6GEYOROO	M	0 OHM	1/10W
J483	ERJ6GEYOROO	M	0 OHM	1/10W
J485	ERJ6GEYOROO	M	0 OHM	1/10W
J486	ERJ6GEYOROO	M	0 OHM	1/10W
J487	ERJ6GEYOROO	M	0 OHM	1/10W
J488	ERJ6GEYOROO	M	0 OHM	1/10W
J489	ERJ6GEYOROO	M	0 OHM	1/10W
J490	ERJ6GEYOROO	M	0 OHM	1/10W

Ref.No.	Part No.	Description			
R332	ERJ6ENF4022	M	40.2K OHM	F	1/10W
R333	ERJ6ENF1373	M	137K OHM	F	1/10W
R334	ERJ6GEYJ102	M	1K OHM	J	1/10W
R335	ERJ6ENF2211	M	2.21K OHM	F	1/10W
R336	ERDS1FJ125	C	1.2M OHM	J	1/2W
R337	ERDS2TJ102	C	1K OHM	J	1/4W
R338	ERJ6ENF7501	M	7.5K OHM	F	1/10W
R339	ERDS2TJ102	C	1K OHM	J	1/4W
R340	ERJ6GEYJ123	M	12K OHM	J	1/10W
R341	ERJ6GEY0R00	M	0 OHM		1/10W
R342	ERJ6GEYJ681	M	680 OHM	J	1/10W
R343	ERJ6GEYJ272	M	2.7K OHM	J	1/10W
R344	ERJ6GEYJ332	M	3.3K OHM	J	1/10W
R345	ERJ6GEYJ104	M	100K OHM	J	1/10W
R349	ERJ6ENF1002	M	10K OHM	F	1/10W
R350	ERJ6ENF1372	M	13.7K OHM	F	1/10W
R351	ERDS1FJ104	C	100K OHM	J	1/2W
R352	ERDS1FJ104	C	100K OHM	J	1/2W
R353	ERJ6ENF5901	M	5.9K OHM	F	1/10W
R354	ERJ6GEYJ123	M	12K OHM	J	1/10W
R356	ERJ6GEYJ563	M	56K OHM	J	1/10W
R357	ERDS1FJ104	C	100K OHM	J	1/2W
R361	ERJ6GEYJ562	M	5.6K OHM	J	1/10W
R362	ERJ6GEYJ392	M	3.9K OHM	J	1/10W
R363	ERDS1FJ151	C	150 OHM	J	1/2W
R368	ERJ6GEYJ103	M	10K OHM	J	1/10W
R369	ERJ6GEYJ103	M	10K OHM	J	1/10W
R371	ERJ6GEYJ682	M	6.8K OHM	J	1/10W
R372	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R373	ERJ6ENF6811	M	6.81K OHM	F	1/10W
R374	ERJ6GEYJ682	M	6.8K OHM	J	1/10W
R375	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R376	ERJ6ENF2001	M	2K OHM	F	1/10W
R377	ERDS2TJ510	C	51 OHM	J	1/4W
R378	ERJ6ENF1001	M	1K OHM	F	1/10W
R379	ERDS2TJ510	C	51 OHM	J	1/4W
R380	ERDS2TJ121	C	120 OHM	J	1/4W
R381	ERJ6ENF8251	M	8.25K OHM	F	1/10W
R382	ERJ6ENF1212	M	12.1K OHM	F	1/10W
R383	ERJ6ENF4021	M	4.02K OHM	F	1/10W
R384	ERJ6ENF1961	M	1.96K OHM	F	1/10W
R385	ERJ6GEYJ332	M	3.3K OHM	J	1/10W
R386	ERJ6GEYJ272	M	2.7K OHM	J	1/10W
R388	ERJ6ENF5362	M	53.6K OHM	F	1/10W
R389	ERJ6ENF2322	M	23.2K OHM	F	1/10W
R390	ERJ6GEYJ123	M	12K OHM	J	1/10W
R391	ERJ6GEYJ562	M	5.6K OHM	J	1/10W
R400	ERJ6GEYJ332	M	3.3K OHM	J	1/10W
R401	ERJ6GEYJ272	M	2.7K OHM	J	1/10W
R402	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R403	ERJ6ENF3013	M	301K OHM	F	1/10W
R420	ERJ6ENF8661	M	8.66K OHM	F	1/10W
R421	ERJ6ENF5110	M	511 OHM	F	1/10W
R440	ERJ6GEYJ333	M	33K OHM	J	1/10W
R441	ERJ6GEYJ182	M	1.8K OHM	J	1/10W
R442	ERJ6GEY0R00	M	0 OHM		1/10W
R444	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R445	ERJ6GEYJ102	M	1K OHM	J	1/10W
R446	ERDS1FJ391	C	390 OHM	J	1/2W
R447	ERJ6GEYJ153	M	15K OHM	J	1/10W
R448	ERJ6GEYJ822	M	8.2K OHM	J	1/10W
R451	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R456	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R457	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R458	ERJ6GEYJ822	M	8.2K OHM	J	1/10W
R459	ERJ6ENF1583	M	158K OHM	F	1/10W
R460	ERD25FJ101K	C	100 OHM	J	1/4W
R461	ERJ6ENF1101	M	1.1K OHM	F	1/10W
R462	ERJ6ENF5621	M	5.62K OHM	F	1/10W
R463	ERJ6ENF3321	M	3.32K OHM	F	1/10W
R464	ERJ6ENF2211	M	2.21K OHM	F	1/10W
R465	ERD25FJ222K	C	2.2K OHM	J	1/4W
R466	ERJ6ENF3651	M	3.65K OHM	F	1/10W
R467	ERJ6ENF2741	M	2.74K OHM	F	1/10W
R468	ERJ6ENF7872	M	78.7K OHM	F	1/10W
R469	ERJ6ENF2102	M	21K OHM	F	1/10W
R470	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R471	ERJ6GEYJ152	M	1.5K OHM	J	1/10W
R472	ERJ6GEYJ682	M	6.8K OHM	J	1/10W
R473	ERJ6GEYJ122	M	1.2K OHM	J	1/10W
R474	ERJ6GEYJ333	M	33K OHM	J	1/10W
R475	ERJ6ENF4021	M	4.02K OHM	F	1/10W
R476	ERJ6GEYJ153	M	15K OHM	J	1/10W
R477	ERJ6GEYJ103	M	10K OHM	J	1/10W
R478	ERJ6ENF2001	M	2K OHM	F	1/10W
R479	ERJ6ENF1002	M	10K OHM	F	1/10W
R480	ERQ14AJ330	F	33 OHM	J	1/4W
R481	ERJ6GEYJ103	M	10K OHM	J	1/10W
R482	ERJ6ENF1002	M	10K OHM	F	1/10W
R483	ERJ6ENF1202	M	12K OHM	F	1/10W
R484	ERJ6ENF7502	M	75K OHM	F	1/10W
R485	ERQ1CJP4R7S	F	4.7 OHM	J	1W
R486	ERDS1FJ751	C	750 OHM	J	1/2W
R487	ERDS1FJ751	C	750 OHM	J	1/2W
R488	ERDS1FJ751	C	750 OHM	J	1/2W
R489	ERJ6ENF1001	M	1K OHM	F	1/10W
R490	ERJ6ENF3921	M	3.92K OHM	F	1/10W
R491	ERJ6ENF2261	M	2.26K OHM	F	1/10W
R492	ERJ6GEYJ470	M	47 OHM	J	1/10W
R493	ERX2SG1R0	M	1 OHM	G	2W
R494	ERD25FJ3R3K	C	3.3 OHM	J	1/4W
R495	ERD25FJ3R3K	C	3.3 OHM	J	1/4W
R496	ERG3FJ680	M	68 OHM	J	3W
R497	ERDS2TJ332	C	3.3K OHM	J	1/4W
R498	ERG3FJ470	M	47 OHM	J	3W
R499	ERQ14AJ1R0	F	1 OHM	J	1/4W
R502	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R504	ERJ6GEYJ123	M	12K OHM	J	1/10W
R505	ERJ8GEYJ153	M	15K OHM	J	1/8W
R506	ERJ6GEYJ561	M	560 OHM	J	1/10W
R507	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R508	ERJ6GEYJ562	M	5.6K OHM	J	1/10W
R509	ERJ6GEYJ223	M	22K OHM	J	1/10W
R510	ERJ6ENF4221	M	4.22K OHM	F	1/10W
R511	ERJ6ENF5111	M	5.11K OHM	F	1/10W
R512	ERJ6ENF1502	M	15K OHM	F	1/10W
R516	ERJ6ENF1821	M	1.82K OHM	F	1/10W
R518	ERJ6GEYJ332	M	3.3K OHM	J	1/10W
R520	ERJ6ENF1051	M	1.05K OHM	F	1/10W
R521	ERJ6GEYJ104	M	100K OHM	J	1/10W
R522	ERJ6ENF9091	M	9.09K OHM	F	1/10W
R523	ERJ6GEYJ333	M	33K OHM	J	1/10W
R524	ERDS1FJ470	C	47 OHM	J	1/2W
R525	ERJ6ENF1001	M	1K OHM	F	1/10W

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
R526	ERJ6ENF2553	M	255K OHM	F	1/10W	R644	ERD25FJ100K	C	10 OHM	J	1/4W
R527	ERJ6GEYJ104	M	100K OHM	J	1/10W	R645	ERD25FJ100K	C	10 OHM	J	1/4W
R528	ERJ6GEYJ122	M	1.2K OHM	J	1/10W	R646	ERD25FJ220K	C	22 OHM	J	1/4W
R529	ERJ6GEYJ682	M	6.8K OHM	J	1/10W	R650	ERJ6ENF3921	M	3.92K OHM	F	1/10W
R530	ERJ6GEYJ223	M	22K OHM	J	1/10W	R651	ERJ6ENF3921	M	3.92K OHM	F	1/10W
R539	ERJ6GEYJ222	M	2.2K OHM	J	1/10W	R652	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R542	ERJ8ENF3241	M	3.24K OHM	F	1/8W	R653	ERJ6GEYJ102	M	1K OHM	J	1/10W
R543	ERJ8GCYJ563	M	56K OHM	J	1/8W	R656	ERJ6GEYJ102	M	1K OHM	J	1/10W
R544	ERJ8ENF1332	M	13.3K OHM	F	1/8W	R657	ERJ6GEYJ103	M	10K OHM	J	1/10W
R545	TARRS5B151J2	M	150 OHM	J	5W	R658	ERJ6GEYJ153	M	15K OHM	J	1/10W
R547	ERJ6GEYJ470	M	47 OHM	J	1/10W	R659	ERJ6GEYJ102	M	1K OHM	J	1/10W
R548	ERJ6GEYJ332	M	3.3K OHM	J	1/10W	R660	ERJ6ENF2741	M	2.74K OHM	F	1/10W
R549	ERG1SJ561	M	560 OHM	J	1W	R661	ERJ6GEYJ124	M	120K OHM	J	1/10W
R551	ERX2SJ1R5	M	1.5 OHM	J	2W	R662	ERJ6GEYJ152	M	1.5K OHM	J	1/10W
R552	ERX2SJ1R8	M	1.8 OHM	J	2W	R663	ERJ6GEYJ103	M	10K OHM	J	1/10W
R554	ERX3FJX6R8D	M	6.8 OHM	J	3W	R664	ERJ6GEYJ103	M	10K OHM	J	1/10W
R560	ERJ8GCYJ472	M	4.7K OHM	J	1/8W	R665	ERJ6GEYJ103	M	10K OHM	J	1/10W
R561	ERJ6GEYJ680	M	68 OHM	J	1/10W	R666	ERJ6GEYJ273	M	27K OHM	J	1/10W
R563	ERJ8GCYJ472	M	4.7K OHM	J	1/8W	R667	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R564	ERJ6GEYJ680	M	68 OHM	J	1/10W	R668	ERJ6GEYJ104	M	100K OHM	J	1/10W
R566	ERJ8GCYJ472	M	4.7K OHM	J	1/8W	R669	ERJ6GEYJ392	M	3.9K OHM	J	1/10W
R567	ERJ6GEYJ680	M	68 OHM	J	1/10W	R672	ERDS2TJ102	C	1K OHM	J	1/4W
R571	ERJ6GEYJ562	M	5.6K OHM	J	1/10W	R674	ERDS1FJ391	C	390 OHM	J	1/2W
R572	ERJ6GEYJ562	M	5.6K OHM	J	1/10W	R675	ERQ14AJ101	F	100 OHM	J	1/4W
R573	ERDS1FJ221	C	220 OHM	J	1/2W	R676	ERQ14AJ101	F	100 OHM	J	1/4W
R574	ERDS1FJ121	C	120 OHM	J	1/2W	R678	ERJ12YJ220	M	22 OHM	J	1/2W
R575	ERJ6GEYJ101	M	100 OHM	J	1/10W	R679	ERJ6GEYJ104	M	100K OHM	J	1/10W
R576	ERJ6GEYJ101	M	100 OHM	J	1/10W	R680	ERJ6GEYJ104	M	100K OHM	J	1/10W
R577	ERJ6GEYJ101	M	100 OHM	J	1/10W	R685	ERJ12YJ121	M	120 OHM	J	1/2W
R580	EROS1CKF5112	M	51.1K OHM	F	1/2W	R686	ERJ12YJ121	M	120 OHM	J	1/2W
R581	EROS2CKF1152	M	11.5K OHM	F	1/4W	R687	ERJ12YJ121	M	120 OHM	J	1/2W
R582	EROS1CKF5112	M	51.1K OHM	F	1/2W	R690	ERJ6GEYJ104	M	100K OHM	J	1/10W
R583	EROS2CKF6491	M	6.49K OHM	F	1/4W	R691	ERJ6ENF2103	M	210K OHM	F	1/10W
R584	ERDS1FJ562	C	5.6K OHM	J	1/2W	R692	ERJ6GEYJ223	M	22K OHM	J	1/10W
R586	EROS2CKF1211	M	1.21K OHM	F	1/4W	R693	ERJ6ENF5621	M	5.62K OHM	F	1/10W
R587	ERDS2TJ332	C	3.3K OHM	J	1/4W	R694	ERJ6ENF2053	M	205K OHM	F	1/10W
R588	TARRS5B150J2	M	15 OHM	J	5W	R695	ERJ6ENF1102	M	11K OHM	F	1/10W
R589	TARRS5B150J2	M	15 OHM	J	5W	R696	ERJ12YJ104	M	100K OHM	J	1/2W
R599	ERQ12HJ220	F	22 OHM	J	1/2W	R697	ERJ12YJ104	M	100K OHM	J	1/2W
R601	ERG2SJ151	M	150 OHM	J	2W	R698	ERJ6GEYJ221	M	220 OHM	J	1/10W
R602	ERQ14AJ100	F	10 OHM	J	1/4W	R699	ERJ12YJ331	M	330 OHM	J	1/2W
R605	ERD25FJ100K	C	10 OHM	J	1/4W	R702	ERJ6GEYJ103	M	10K OHM	J	1/10W
R606	ERG3FJ822	M	8.2K OHM	J	3W	R703	ERJ6GEYJ393	M	39K OHM	J	1/10W
R607	ERG3FJ822	M	8.2K OHM	J	3W	R704	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R608	ERG1SJ104	M	100K OHM	J	1W	R706	ERJ6GEYJ221	M	220 OHM	J	1/10W
R609	ERG1SJ823	M	82K OHM	J	1W	R708	ERJ6GEYJ823	M	82K OHM	J	1/10W
R610	ERJ12YJ104	M	100K OHM	J	1/2W	R709	ERJ6GEYJ101	M	100 OHM	J	1/10W
R611	ERJ12YJ104	M	100K OHM	J	1/2W	R714	ERJ6ENF1541	M	1.54K OHM	F	1/10W
R620	ERJ6GEYJ104	M	100K OHM	J	1/10W	R715	EROS2CKF5620	M	562 OHM	F	1/4W
R621	EROS1FJ224	C	220K OHM	J	1/2W	R717	ERDS1FJ332	C	3.3K OHM	J	1/2W
R622	EROS1FJ224	C	220K OHM	J	1/2W	R718	ERDS1FJ332	C	3.3K OHM	J	1/2W
R625	ERJ6GEY0R00	M	0 OHM		1/10W	R720	ERJ6GEYJ104	M	100K OHM	J	1/10W
R630	ERJ6GEYJ183	M	18K OHM	J	1/10W	R741	ERJ6ENF1002	M	10K OHM	F	1/10W
R631	ERJ6GEYJ472	M	4.7K OHM	J	1/10W	R742	ERJ8ENF1692	M	16.9K OHM	F	1/8W
R633	ERJ6GEYJ101	M	100 OHM	J	1/10W	R751	ERJ6ENF1001	M	1K OHM	F	1/10W
R634	ERJ6ENF1002	M	10K OHM	F	1/10W	R752	ERJ6ENF2553	M	255K OHM	F	1/10W
R636	ERJ6ENF5361	M	5.36K OHM	F	1/10W	R753	ERJ6ENF1001	M	1K OHM	F	1/10W
R637	ERJ6ENF1582	M	15.8K OHM	F	1/10W	R754	ERJ6ENF2553	M	255K OHM	F	1/10W
R638	ERJ6ENF4641	M	4.64K OHM	F	1/10W	R767	ERJ6GEYJ392	M	3.9K OHM	J	1/10W
R640	ERJ6GEYJ222	M	2.2K OHM	J	1/10W	R768	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R641	ERJ6GEYJ101	M	100 OHM	J	1/10W	R773	ERJ6ENF3922	M	39.2K OHM	F	1/10W
R642	ERJ6GEYJ101	M	100 OHM	J	1/10W	R774	ERJ6GEYJ332	M	3.3K OHM	J	1/10W

Ref.No.	Part No.	Description				
R775	ERQ14AJ100	F	10	OHM	J	1/4W
R777	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R778	ERJ8GCYJ682	M	6.8K	OHM	J	1/8W
R779	ERJ6ENF2941	M	2.94K	OHM	F	1/10W
R789	ERJ6GEYJ392	M	3.9K	OHM	J	1/10W
R790	ERJ6GEYJ682	M	6.8K	OHM	J	1/10W
R799	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R801	ERC12AGK394	S	390K	OHM	K	1/2W
R802	ERJ6GEYJ273	M	27K	OHM	J	1/10W
R803	ERJ6GEYJ222	M	2.2K	OHM	J	1/10W
R805	ERJ6GEYJ222	M	2.2K	OHM	J	1/10W
R806	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R807	ERJ8GCYJ562	M	5.6K	OHM	J	1/8W
R808	ERJ6GEYJ471	M	470	OHM	J	1/10W
R809	ERJ12YJ473	M	47K	OHM	J	1/2W
R810	ERJ6GEYJ391	M	390	OHM	J	1/10W
R811	ERDS1FJ224	C	220K	OHM	J	1/2W
R812	ERDS1FJ274	C	270K	OHM	J	1/2W
R813	ERJ6GEYJ152	M	1.5K	OHM	J	1/10W
R814	ERJ6GEYJ151	M	150	OHM	J	1/10W
R815	ERJ6GEYJ681	M	680	OHM	J	1/10W
R816	ERJ6ENF3011	M	3.01K	OHM	F	1/10W
R817	ERQ12AJ6R8	F	6.8	OHM	J	1/2W
R818	ERJ6GEY0R00	M	0	OHM		1/10W
R819	ERDS2TJ224	C	220K	OHM	J	1/4W
R820	ERDS2TJ224	C	220K	OHM	J	1/4W
R821	TARRS3B333J2	M	33K	OHM	J	3W
R822	ERJ6GEYJ182	M	1.8K	OHM	J	1/10W
R823	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R824	ERJ8GCYJ681	M	680	OHM	J	1/8W
R825	ERJ6GEYJ821	M	820	OHM	J	1/10W
R826	ERJ6GEYJ101	M	100	OHM	J	1/10W
R827	ERJ6ENF2431	M	2.43K	OHM	F	1/10W
R828	ERJ12YJ223	M	22K	OHM	J	1/2W
R829	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R830	ERJ6GEYJ332	M	3.3K	OHM	J	1/10W
R831	ERJ6GEYJ473	M	47K	OHM	J	1/10W
R832	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R833	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R834	ERW2PKR12	W	0.12	OHM	K	2W
R835	ERDS1FJ224	C	220K	OHM	J	1/2W
R836	ERG2SJ223	M	22K	OHM	J	2W
R837	ERG2SJ223	M	22K	OHM	J	2W
R838	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R839	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R840	ERQ1CKPR39S	F	0.39	OHM	K	1W
R841	ERQ12AJR33HK	F	0.33	OHM	J	1/2W
R842	ERQ12HJ1R2	F	1.2	OHM	J	1/2W
R843	ERQ12AJR12HK	F	0.12	OHM	J	1/2W
R844	ERQ12AJR12HK	F	0.12	OHM	J	1/2W
R845	TAR18BKOR11Z	F	0.11	OHM	K	1/4W
R846	ERJ12YJ471	M	470	OHM	J	1/2W
R847	ERJ12YJ122	M	1.2K	OHM	J	1/2W
R848	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R849	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R850	ERJ12YJ103	M	10K	OHM	J	1/2W
R851	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R852	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R853	ERJ8GCYJ473	M	47K	OHM	J	1/8W
R854	ERX3FJX2R2D	M	2.2	OHM	J	3W
R855	ERJ6ENF3401	M	3.4K	OHM	F	1/10W
R856	ERJ6GEYJ333	M	33K	OHM	J	1/10W
R858	ERJ12YJ222	M	2.2K	OHM	J	1/2W
R859	ERJ12YJ222	M	2.2K	OHM	J	1/2W
R860	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R861	TAR18BKOR47Z	F	0.47	OHM	K	1/4W
R862	ERJ6ENF1002	M	10K	OHM	F	1/10W
R863	ERJ6GEYJ101	M	100	OHM	J	1/10W
R864	ERJ6GEYJ683	M	68K	OHM	J	1/10W
R865	ERDS1FJ224	C	220K	OHM	J	1/2W
R866	ERQ12HJ271	F	270	OHM	J	1/2W
R867	ERJ6ENF3741	M	3.74K	OHM	F	1/10W
R868	ERJ6ENF6651	M	6.65K	OHM	F	1/10W
R869	ERJ6ENF4221	M	4.22K	OHM	F	1/10W
R870	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R871	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R872	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R873	ERJ6GEYJ222	M	2.2K	OHM	J	1/10W
R874	ERJ6GEYJ392	M	3.9K	OHM	J	1/10W
R875	ERJ6GEYJ104	M	100K	OHM	J	1/10W
R876	ERJ6ENF5110	M	511	OHM	F	1/10W
R877	ERJ6GEYJ562	M	5.6K	OHM	J	1/10W
R878	ERJ6GEYJ823	M	82K	OHM	J	1/10W
R879	ERG1SJ683	M	68K	OHM	J	1W
R880	ERJ6ENF1211	M	1.21K	OHM	F	1/10W
R881	ERJ6ENF2211	M	2.21K	OHM	F	1/10W
R882	ERDS2TJ102	C	1K	OHM	J	1/4W
R883	ERQ12HJ391	F	390	OHM	J	1/2W
R884	ERJ6GEYJ104	M	100K	OHM	J	1/10W
R885	ERQ14AJ101	F	100	OHM	J	1/4W
R886	ERQ14AJ101	F	100	OHM	J	1/4W
R887	ERJ12YJ220	M	22	OHM	J	1/2W
R888	ERJ6GEYJ104	M	100K	OHM	J	1/10W
R889	ERJ6GEYJ822	M	8.2K	OHM	J	1/10W
R890	ERX3FJX1R6D	M	1.6	OHM	J	3W
R891	TRPF5B0M090A	POSISTOR				
R892	ERDS1FJ470	C	47	OHM	J	1/2W
R893	ERDS1FJ221	C	220	OHM	J	1/2W
R894	ERJ6GEYJ390	M	39	OHM	J	1/10W
R895	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R896	ERJ12YJ102	M	1K	OHM	J	1/2W
R897	ERJ12YJ104	M	100K	OHM	J	1/2W
R898	ERJ12YJ104	M	100K	OHM	J	1/2W
R899	ERJ12YJ104	M	100K	OHM	J	1/2W
R901	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R902	ERJ6GEYJ682	M	6.8K	OHM	J	1/10W
R903	ERDS2TJ562	C	5.6K	OHM	J	1/4W
R908	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R918	ERJ6GEYJ101	M	100	OHM	J	1/10W
R923	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R930	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R932	ERJ6GEYJ101	M	100	OHM	J	1/10W
R933	ERJ6GEYJ101	M	100	OHM	J	1/10W
R937	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R938	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R939	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R940	ERJ6GEYJ223	M	22K	OHM	J	1/10W
R941	ERJ6GEYJ223	M	22K	OHM	J	1/10W
R943	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R944	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R945	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R946	ERJ8GCYJ271	M	270	OHM	J	1/8W
R947	ERJ6GEYJ751	M	750	OHM	J	1/10W
R949	ERJ6GEYJ223	M	22K	OHM	J	1/10W

Ref.No.	Part No.	Description			
R950	ERJ6GEYJ223	M	22K OHM	J	1/10W
R951	ERJ6GEYJ223	M	22K OHM	J	1/10W
R952	ERJ6GEYJ223	M	22K OHM	J	1/10W
R950	ERJ6GEYJ103	M	10K OHM	J	1/10W
R962	ERJ6GEYJ103	M	10K OHM	J	1/10W
R963	ERJ6GEYJ103	M	10K OHM	J	1/10W
R969	ERJ6GEYJ334	M	330K OHM	J	1/10W
R970	ERJ6GEYJ334	M	330K OHM	J	1/10W
R971	ERJ6GEYJ334	M	330K OHM	J	1/10W
R973	ERDS2TJ103	C	10K OHM	J	1/4W
R974	ERDS2TJ103	C	10K OHM	J	1/4W
R975	ERDS2TJ103	C	10K OHM	J	1/4W
R977	ERJ6GEYJ223	M	22K OHM	J	1/10W
R978	ERJ6GEYJ392	M	3.9K OHM	J	1/10W
R979	ERJ6GEYJ392	M	3.9K OHM	J	1/10W
R981	ERJ6GEYJ333	M	33K OHM	J	1/10W
R982	ERJ6GEYJ101	M	100 OHM	J	1/10W
R983	ERJ6GEYJ101	M	100 OHM	J	1/10W
R984	ERJ6GEYJ101	M	100 OHM	J	1/10W
R985	ERJ6GEYJ101	M	100 OHM	J	1/10W
R995	ERJ6GEYJ101	M	100 OHM	J	1/10W
R997	ERJ6ENF1001	M	1K OHM	F	1/10W
R998	ERJ6ENF2553	M	255K OHM	F	1/10W
R999	ERJ6GEYJ103	M	10K OHM	J	1/10W
R1004	ERJ6GEYJ101	M	100 OHM	J	1/10W
R1006	ERJ6GEYJ220	M	22 OHM	J	1/10W
R1009	ERJ6ENF7870	M	787 OHM	F	1/10W
R1010	ERJ6ENF5600	M	560 OHM	F	1/10W
R1011	ERJ6ENF39R0	M	39 OHM	F	1/10W
R1013	EROS2CKF4702	M	47K OHM	F	1/4W
R1014	EROS2CKF3091	M	3.09K OHM	F	1/4W
R1016	ERJ6ENF8200	M	820 OHM	F	1/10W
R1018	ERJ8GCYJ331	M	330 OHM	J	1/8W
R1019	ERG2SJ123	M	12K OHM	J	2W
R1020	ERJ6ENF1002	M	10K OHM	F	1/10W
R1021	ERJ6ENF1002	M	10K OHM	F	1/10W
R1022	ERDS1FJ220	C	22 OHM	J	1/2W
R1023	ERDS2TJ102	C	1K OHM	J	1/4W
R1024	ERJ6GEYJ123	M	12K OHM	J	1/10W
R1025	ERJ6ENF1202	M	12K OHM	F	1/10W
R1026	EROS2CKF2262	M	22.6K OHM	F	1/4W
R1027	ERJ6ENF1002	M	10K OHM	F	1/10W
R1028	ERJ6ENF7680	M	768 OHM	F	1/10W
R1029	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1030	ERJ6GEYJ154	M	150K OHM	J	1/10W
R1031	ERDS2TC0	C	0 OHM		1/4W
R1040	ERJ6ENF1101	M	1.1K OHM	F	1/10W
R1041	ERJ6ENF2371	M	2.37K OHM	F	1/10W
R1042	ERJ6ENF6810	M	681 OHM	F	1/10W
R1043	ERJ6ENF9531	M	9.53K OHM	F	1/10W
R1044	ERJ6ENF3241	M	3.24K OHM	F	1/10W
R1045	ERJ6ENF1501	M	1.5K OHM	F	1/10W
R1046	ERJ6GEYJ101	M	100 OHM	J	1/10W
R1047	ERJ6GEYJ101	M	100 OHM	J	1/10W
R1050	EROS2CKF84R5	M	84.5 OHM	F	1/4W
R1051	ERJ6GEYJ820	M	82 OHM	J	1/10W
R1055	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1056	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1058	ERJ6GEYJ152	M	1.5K OHM	J	1/10W
R1059	EROS2TJ330	C	33 OHM	J	1/4W
R1060	EROS2CKF84R5	M	84.5 OHM	F	1/4W
R1061	ERJ6GEYJ820	M	82 OHM	J	1/10W

Ref.No.	Part No.	Description			
R1065	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1066	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1075	ERDS2TJ224	C	220K OHM	J	1/4W
R1076	ERJ6GEYJ103	M	10K OHM	J	1/10W
R1077	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1080	ERJ6ENF1202	M	12K OHM	F	1/10W
R1081	ERJ6ENF2052	M	20.5K OHM	F	1/10W
R1082	ERJ6ENF1002	M	10K OHM	F	1/10W
R1083	ERJ6ENF2702	M	27K OHM	F	1/10W
R1104	ERJ6GEYJ101	M	100 OHM	J	1/10W
R1106	ERJ6GEYJ220	M	22 OHM	J	1/10W
R1109	ERJ6ENF7870	M	787 OHM	F	1/10W
R1110	ERJ6ENF5600	M	560 OHM	F	1/10W
R1111	ERJ6ENF39R0	M	39 OHM	F	1/10W
R1113	EROS2CKF4702	M	47K OHM	F	1/4W
R1114	EROS2CKF3091	M	3.09K OHM	F	1/4W
R1116	ERJ6ENF8200	M	820 OHM	F	1/10W
R1118	ERJ8GCYJ331	M	330 OHM	J	1/8W
R1119	ERG25J123	M	12K OHM	J	2W
R1120	ERJ6ENF1002	M	10K OHM	F	1/10W
R1121	ERJ6ENF1002	M	10K OHM	F	1/10W
R1122	ERDS1FJ220	C	22 OHM	J	1/2W
R1123	ERDS2TJ102	C	1K OHM	J	1/4W
R1124	ERJ6GEYJ123	M	12K OHM	J	1/10W
R1125	ERJ6ENF1202	M	12K OHM	F	1/10W
R1126	EROS2CKF2262	M	22.6K OHM	F	1/4W
R1127	ERJ6ENF1002	M	10K OHM	F	1/10W
R1128	ERJ6ENF7680	M	768 OHM	F	1/10W
R1129	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1130	ERJ6GEYJ154	M	150K OHM	J	1/10W
R1131	ERDS2TJ101	C	100 OHM	J	1/4W
R1140	ERJ6ENF1101	M	1.1K OHM	F	1/10W
R1141	ERJ6ENF2371	M	2.37K OHM	F	1/10W
R1142	ERJ6ENF6810	M	681 OHM	F	1/10W
R1143	ERJ6ENF9531	M	9.53K OHM	F	1/10W
R1144	ERJ6ENF3241	M	3.24K OHM	F	1/10W
R1145	ERJ6ENF1501	M	1.5K OHM	F	1/10W
R1146	ERJ6GEYJ101	M	100 OHM	J	1/10W
R1147	ERJ6GEYJ101	M	100 OHM	J	1/10W
R1150	EROS2CKF84R5	M	84.5 OHM	F	1/4W
R1151	ERJ6GEYJ820	M	82 OHM	J	1/10W
R1155	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1156	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1158	ERJ6GEYJ152	M	1.5K OHM	J	1/10W
R1159	ERDS2TJ330	C	33 OHM	J	1/4W
R1160	EROS2CKF84R5	M	84.5 OHM	F	1/4W
R1161	ERJ6GEYJ820	M	82 OHM	J	1/10W
R1165	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1166	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1170	ERDS2TJ122	C	1.2K OHM	J	1/4W
R1175	EROS2TJ224	C	220K OHM	J	1/4W
R1176	ERJ6GEYJ103	M	10K OHM	J	1/10W
R1177	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1180	EROS2CKF1202	M	12K OHM	F	1/4W
R1181	ERJ6ENF2052	M	20.5K OHM	F	1/10W
R1182	ERJ6ENF1002	M	10K OHM	F	1/10W
R1183	ERJ6ENF2702	M	27K OHM	F	1/10W
R1204	ERJ6GEYJ101	M	100 OHM	J	1/10W
R1206	ERJ6GEYJ220	M	22 OHM	J	1/10W
R1209	ERJ6ENF7870	M	787 OHM	F	1/10W
R1210	ERJ6ENF5600	M	560 OHM	F	1/10W
R1211	ERJ6ENF47R0	M	47 OHM	F	1/10W

Ref.No.	Part No.	Description			
R1213	EROS2CKF4702	M	47K OHM	F	1/4W
R1214	EROS2CKF3091	M	3.09K OHM	F	1/4W
R1216	ERJ6ENF8200	M	820 OHM	F	1/10W
R1218	ERJ8GEYJ331	M	330 OHM	J	1/8W
R1219	ERG2SJ123	M	12K OHM	J	2W
R1220	ERJ6ENF1002	M	10K OHM	F	1/10W
R1221	ERJ6ENF1002	M	10K OHM	F	1/10W
R1222	ERDS1FJ220	C	22 OHM	J	1/2W
R1223	ERDS2TJ102	C	1K OHM	J	1/4W
R1224	ERJ6GEYJ123	M	12K OHM	J	1/10W
R1225	ERJ6ENF1202	M	12K OHM	F	1/10W
R1226	EROS2CKF2262	M	22.6K OHM	F	1/4W
R1227	ERJ6ENF1002	M	10K OHM	F	1/10W
R1228	ERJ6ENF7680	M	768 OHM	F	1/10W
R1229	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1230	ERJ6GEYJ154	M	150K OHM	J	1/10W
R1231	ERDS2TCO	C	0 OHM		1/4W
R1240	ERJ6ENF1101	M	1.1K OHM	F	1/10W
R1241	ERJ6ENF2371	M	2.37K OHM	F	1/10W
R1242	ERJ6ENF6810	M	681 OHM	F	1/10W
R1243	ERJ6ENF9531	M	9.53K OHM	F	1/10W
R1244	ERJ6ENF3241	M	3.24K OHM	F	1/10W
R1245	ERJ6ENF1501	M	1.5K OHM	F	1/10W
R1246	ERJ6GEYJ101	M	100 OHM	J	1/10W
R1247	ERJ6GEYJ101	M	100 OHM	J	1/10W
R1250	EROS2CKF84R5	M	84.5 OHM	F	1/4W
R1251	ERJ6GEYJ820	M	82 OHM	J	1/10W
R1255	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1256	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1258	ERJ6GEYJ152	M	1.5K OHM	J	1/10W
R1259	ERDS2TJ330	C	33 OHM	J	1/4W
R1260	EROS2CKF84R5	M	84.5 OHM	F	1/4W
R1261	ERJ6GEYJ820	M	82 OHM	J	1/10W
R1265	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1266	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1275	ERD25FJ224K	C	220K OHM	J	1/4W
R1276	ERJ6GEYJ103	M	10K OHM	J	1/10W
R1277	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1280	ERJ6ENF1202	M	12K OHM	F	1/10W
R1281	ERJ6ENF2052	M	20.5K OHM	F	1/10W
R1282	ERJ6ENF1002	M	10K OHM	F	1/10W
R1283	ERJ6ENF2702	M	27K OHM	F	1/10W
R1301	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1302	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1303	ERJ6GEYJ152	M	1.5K OHM	J	1/10W
R1304	ERDS2TJ102	C	1K OHM	J	1/4W
R1305	ERJ6ENF1002	M	10K OHM	F	1/10W
R1306	ERJ6ENF1002	M	10K OHM	F	1/10W
R1307	ERJ6GEYJ151	M	150 OHM	J	1/10W
R1308	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1312	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1313	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1314	ERJ6GEYJ331	M	330 OHM	J	1/10W
R1315	ERJ6GEYJ474	M	470K OHM	J	1/10W
R1316	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1317	ERJ6GEYJ912	M	9.1K OHM	J	1/10W
R1318	ERJ6GEYJ682	M	6.8K OHM	J	1/10W
R1320	ERJ6ENF2701	M	2.7K OHM	F	1/10W
R1322	ERJ6GEYJ100	M	10 OHM	J	1/10W
R1324	ERJ6GEYJ103	M	10K OHM	J	1/10W
R1325	ERJ6GEYJ223	M	22K OHM	J	1/10W
R1326	ERJ6GEYJ223	M	22K OHM	J	1/10W
R1327	ERJ6GEYJ103	M	10K OHM	J	1/10W
R1328	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1329	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1331	ERJ6ENF1962	M	19.6K OHM	F	1/10W
R1332	ERJ6ENF1002	M	10K OHM	F	1/10W
R1333	ERJ12YJ681	M	680 OHM	J	1/2W
R1336	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1337	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1338	ERJ6GEYJ561	M	560 OHM	J	1/10W
R1339	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1340	ERJ12YJ681	M	680 OHM	J	1/2W
R1341	ERJ12YJ681	M	680 OHM	J	1/2W
R1342	ERJ6GEYJ220	M	22 OHM	J	1/10W
R1381	ERJ6GEYJ682	M	6.8K OHM	J	1/10W
R1385	ERJ6GEYJ474	M	470K OHM	J	1/10W
R1390	ERDS1FJ561	C	560 OHM	J	1/2W
R1391	ERJ6GEYJ682	M	6.8K OHM	J	1/10W
R1392	ERG1SJ123	M	12K OHM	J	1W
R1395	ERJ6GEYJ474	M	470K OHM	J	1/10W
R1396	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1401	ERJ6GEYJ331	M	330 OHM	J	1/10W
R1402	ERJ6ENF2702	M	27K OHM	F	1/10W
R1403	ERJ6ENF3301	M	3.3K OHM	F	1/10W
R1404	ERJ6ENF2212	M	22.1K OHM	F	1/10W
R1405	ERJ6ENF5621	M	5.62K OHM	F	1/10W
R1406	ERJ6ENF8203	M	820K OHM	F	1/10W
R1408	ERJ6ENF1002	M	10K OHM	F	1/10W
R1409	ERJ6ENF1002	M	10K OHM	F	1/10W
R1410	ERJ6GEYJ124	M	120K OHM	J	1/10W
Z1051A	ERJ6GEY0R00	M	0 OHM		1/10W
Z1061A	ERJ6GEY0R00	M	0 OHM		1/10W
Z1151A	ERJ6GEY0R00	M	0 OHM		1/10W
Z1161A	ERJ6GEY0R00	M	0 OHM		1/10W
Z1251A	ERJ6GEY0R00	M	0 OHM		1/10W
Z1261A	ERJ6GEY0R00	M	0 OHM		1/10W
Z501	ERD25TCO	C	0 OHM		1/4W
Z502	ERD25TCO	C	0 OHM		1/4W
	OTHERS				
	TES9148-2	SPRING(CRT PCB EARTH)			
	TES9511	LED SPRING			
	THE902N	D-SUB SCREW			
	TJS8A4830	BNC TERMINAL			
	TJS8A9600	15P CONNECTOR(D-SUB)			
	TMK87907	MICA SHEET			
	TMK87919	INSULATION SHEET			
	TMM16452	CLAMPER(LONG)			
	TMM7464	CLAMPER(SHORT)			
	TUC87559-1	AC INLET BRACKET			
	TUC87577	SHIELD PLATE(VIDEO PCB)			
	TUW85513	BNC TERMINAL BRACKET			
	TUX86406	FBT BRACKET			
	XTV3+12J	SCREW			
	XTV3+16J	SCREW			
	XWGT40660	WASHER			
	XWG3F10	WASHER			
CL1	TMM85541	CLAMPER(SMALL)			
⚠ F801	XBA2C50TB15L	FUSE(5.0A)			
FG2	TJC85341	EARTH LUG			
FG3	TJC85341	EARTH LUG			
FG4	TJC85341	EARTH LUG			
FG5	TJE85317	LUG TERMINAL			

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
FS801	TJC85502T	FUSE HOLDER			
FS803	TJC85502T	FUSE HOLDER			
JC101	TJC85341	EARTH LUG			
JC102	TJC85341	EARTH LUG			
N7A	TJS9A8291	11P CONNECTOR(L-TYPE)			
N7B	TJS9A8290	11P CONNECTOR			
N8A	TJS9A8260	9P CONNECTOR(L-TYPE)			
N8B	TJS9A8250	9P CONNECTOR			
N9A	TJS9A8220	24P CONNECTOR			
N9B	TJS9A8210	24P CONNECTOR(L-TYPE)			
N10A	EMCS0364MB	3P CONNECTOR(BLUE)			
N10B	EMCS0364MB	3P CONNECTOR(BLUE)			
N12A	TJS9A8090	25P CONNECTOR			
N12B	TJS9A8090	25P CONNECTOR			
N15A	TJS9A848A	7P CONNECTOR			
N15B	TJS9A849A	7P CONNECTOR(L-TYPE)			
N16A	EMCS0364M	3P CONNECTOR			
N16B	EMCS0351ML	3P CONNECTOR(L-TYPE)			
N101	TJS9A863A	2P CONNECTOR			
N104	TJC85342T	LUG TERMINAL			
N105	TJC85342T	LUG TERMINAL			
N106	TJC85342T	LUG TERMINAL			
N381	TJS8A5130	CRT SOCKET			
N382A	TEL302-9	TERMINAL			
N382B	TEL302-9	TERMINAL			
N511B	TJS3A8010	3P CONNECTOR			
⚠ N801	TJS9A9760	AC INLET			
N803A	TJS8A8570	3P CONNECTOR			
N803B	TJS8A8570	3P CONNECTOR			
N901A	TJS9A846A	8P CONNECTOR			
N901B	TJS9A847A	8P CONNECTOR(L-TYPE)			
N901C	EMCS0464M	4P CONNECTOR			
N510-1	TEL302-9	TERMINAL			
N510-2	TEL302-9	TERMINAL			
N510-3	TEL302-9	TERMINAL			
N510-4	TEL302-9	TERMINAL			
N511-1	TEL302-9	TERMINAL			
N511-2	TEL302-9	TERMINAL			
N511-3	TEL302-9	TERMINAL			
N802-1	TEL302-9	TERMINAL			
N802-2	TEL302-9	TERMINAL			
⚠ PC830	TLP721F04GRH	PHOTO COUPLER			
⚠ PC831	TLP721F04GR	PHOTO COUPLER			
⚠ PC832	TLP750D4	PHOTO COUPLER			
⚠ PC833	S21ME4FY	PHOTO COUPLER			
RL571	TSE80892	RELAY			
S290	TAG10003	SPARK GAP			
S301	TAGDSP751N	SPARK GAP			
S302	TAGDSP751N	SPARK GAP			
S691	TAGDSP201MF	SPARK GAP			
S1001	TAGDSP201MF	SPARK GAP			
S1101	TAGDSP201MF	SPARK GAP			
S1201	TAGDSP201MF	SPARK GAP			
⚠ SW801	ESB8278V	SWITCH(POWER)			
SW901	EVQ33405R	SWITCH			
SW902	EVQ33405R	SWITCH			
SW903	EVQ33405R	SWITCH			
SW904	EVQ33405R	SWITCH			
TP1	TEL302-9	TERMINAL			
TP2	TEL302-9	TERMINAL			
TP301	TEL302-9	TERMINAL			
X901	TSS2165TM	CRYSTAL OSCILLATOR			